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STORY CONTENT

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The present experiment examined children's memory for stereotypic and non-stereotypic sex role content in their reading material. Twenty-four male and twenty-four female fifth grade subjects read two short stories, each depicting a male and female character who exhibited an equal number of masculine and feminine traits and behaviors. Results of a choice recognition test, administered shortly after the reading task, revealed that both sexes remembered more of the masculine sex-typed characteristics of male characters, and more of the feminine sex-typed characteristics of female characters. Moreover, the subjects were less proficient in remembering trait descriptions than behavioral descriptions, and were particularly unlikely to remember the feminine traits of male characters. On the basis of these findings, it was speculated that children use the sex role stereotype as an organizational framework in reading comprehension. Possible implications of this research for children's reading programs were discussed.

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Sex Role Stereotypes and Children's
Memory for Story Content

by

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SEX ROLE STEROTYPES AND CHILDREN'S MEMORY FOR STORY CONTENT

INTRODUCTION

Recent investigations (Flerx, Fidler, & Rogers, 1976; Kohlberg, 1966; Williams, Bennett, & Best, 1975) have revealed that patterns of conventional sex role stereotyping are developed in early childhood. By the time most children enter elementary school, they exhibit a clear set of expectations about the nature of masculine and feminine behavior. A number of researchers have hypothesized that sex role stereotypes have detrimental effects upon children, oversimplifying their perceptions of reality and restricting their life options (Saario, Jacklin, & Tittle, 1973; Flerx et al., 1976). However, while there has been significant progress in identifying the characteristics of sex role stereotypes, few studies have examined how stereotypes influence children's processing of new information. Each day children are exposed to a variety of new material about members of both sexes, with standardized reading texts serving as one major source of information. Yet little is known about children's responses to sex-typing in their literature, or its effect upon their memory for story material. In an effort to address this issue, the present study examined the impact of sex role stereotypes on children's memory for selected story content. Specifically, this content depicted major characters of

each sex exhibiting both masculine and feminine traits and behaviors. A major purpose of this research was to determine how children's memory for information is influenced by stereotypic and non-stereotypic sex role content.

Review of the Literature

Sex Role Stereotypes

During the process of socialization, children become increasingly aware of the content of cultural sex role stereotypes (Kagan, 1964). Sex role stereotypes are said to define the behavioral dispositions which are considered more desirable and appropriate for one sex, and less desirable and appropriate for the other (Mischel, 1970). A broad range of human characteristics comprise the content of sex role stereotypes, including attitudes, interests, skills, abilities, and personality traits (Hartley, 1959). In short, sex role stereotypes consist of generalized expectations about the characteristics exhibited by members of each sex.

There has been a surprising amount of agreement among research investigations attempting to delineate the content of sex role stereotypes. Both children and adults have consistently rated males as aggressive, adventurous, disorderly, strong, and independent. On the other hand, females are viewed as sensitive, polite, gentle, and

emotional (Broverman & Broverman, 1970; Hartley, 1959; Williams et al., 1975). Research also indicates that children perceive differential role options for adult men and women. While men are expected to enter a variety of trades and professions, women's opportunities appear restricted to nursing and domestic work (Iglitzin, 1972). Hartley (1960) has found that by four years of age, children believe the primary feminine role to be "housekeeping," and the primary masculine role to be "wage-earning."

The origin of sex role stereotypes has remained a subject of controversy. However, most researchers have emphasized the major contribution of cultural factors in sex role learning and stereotyping. Children observe a variety of sex role models, ranging from parents to contemporary media figures, and are differentially reinforced for their own imitation of sex-appropriate behavior (Mischel, 1970). The process of identifying with a parent or a significant adult is also likely to be accompanied by the internalization of sex role standards (Kagan, 1964; Parsons & Bales, 1955).

Research on sex role learning has indicated that children as young as four years of age exhibit both a knowledge of their own sex, and an awareness of sex role stereotypes (Brown, 1956; Flerx et al., 1976; Hartup & Zook, 1960). Children have also been found to adopt behaviors consistent with their own sex designation, and to imitate same-sex role models more than opposite-sex models (Bandura,

Ross, & Ross, 1963; Hetherington & Frankie, 1967; Madsen, 1968; Portugues & Feshbach, 1972). However, the overall degree of stereotypy, or adherence to contentional sex role standards, has been found to be greater in males than females. Both preschool and elementary school boys exhibit marked preferences for masculine toys and games, whereas girls express relatively weaker interest for play activities associated with their own sex (Hartley, 1959; Sutton-Smith, Rosenberg, & Morgan, 1963; Ward, 1968). Indeed, research has shown that within recent decades, boys have readily given up games which have become popular with girls, whereas girls participate willingly in masculine pastimes (Sutton-Smith & Rosenberg, 1961). Moreover, a recent study utilizing measures of self-acceptance has found that ten-year-old boys prefer activities associated with their own sex more than girls (Ferguson & Maccoby, 1966). This disparity in the degree of stereotypy exhibited by the sexes has generally been attributed to differential socialization experiences. While young girls are relatively free to experiment with masculine role behaviors, effeminacy in males is discouraged and even punished (Fling & Manosevitz, 1972; Lansky, 1967). Thus, through processes of observation, modeling, and social conditioning, children develop a knowledge of the prescriptions and proscriptions of sex role stereotypes very early in their lives.

The Portrayal of Sex Role Stereotypes in Children's Reading Material

Still another source of information about sex role standards is the public school system. Given the amount of time children spend in the classroom, researchers have begun to investigate the nature of instructional materials. It has been estimated that almost 80% of the child's time in the classroom is spent in reading instruction or general reading activities (Zimet & others, 1973). Research studies indicate that these reading texts present children with a variety of sex role models, and communicate societal expectations for personal development (Saario et al., 1973; Women on Words and Images, 1975). Through books, children acquire a knowledge of the acceptable standards for male and female behavior.

Several studies have attempted to analyze the nature and frequency of sex role stereotyping in children's reading series (Britton, 1973; Child, Potter, & Levine, 1946; Saario et al., 1973; Women on Words and Images, 1975). Using various methods of content analysis, these studies have compared the occupations, behaviors, and relative amounts of space assigned to male and female story characters. Without exception, these analyses have revealed that females are greatly under-represented in the central roles, activities, occupations, and illustrations of standardized texts. For example, in one study of 134 readers used throughout the country, it was found that the ratio

of boy- to girl-centered stories was 5 to 2. A comparison of male and female biographies revealed an even greater bias, with male biographies outnumbering female 6 to 1 (Women on Words and Images, 1975). It has been argued that the disproportionate amount of exposure allotted to males is indicative of society's evaluation of the worth of the sexes, with males commanding more value and status than their female counterparts (Weitzman, Eifler, Hokada, & Ross, 1972; Women on Words and Images, 1975).

In addition to the overwhelming preponderance of male characters in children's readers, studies have also found that the stories portray rigid sex-typed themes. Male story themes commonly involve adventure, activity, work projects, or aggression, whereas female plots focus upon school, fantasy, and "pollyannaish" emotions (Blom, Waite, & Zimet, 1967; Child et al., 1946). Moreover, the range of roles and career opportunities for adult women is severely limited, with the majority of women characters depicted as wives and mothers (Britton, 1973; Women on Words and Images, 1975). Adult male characters are portrayed in a variety of trades and professions which provide financial rewards and opportunities for individual growth (Women on Words and Images, 1975).

Research on children's reading series has also suggested that there are notable differences in the traits and behaviors attributed to story characters of each sex. Female characters have typically been

portrayed as weak, dependent, fearful, kind, sociable, and inactive (Women on Words and Images, 1975). Female characters obey orders rather than initiate them, engage in fantasy rather than problem-solving, and choose quiet indoor activity over active outdoor play (Saario et al., 1973). On the other hand, male characters are more likely to exhibit autonomy, creativity, bravery, perseverance, and self-respect (Women on Words and Images, 1975). While female characters are praised for their beauty and good manners, male characters commonly receive attention for their cleverness and achievements (Sutherland, 1971). In one recent analysis, Saario et al. (1973) not only obtained results which supported the previous findings, but also discovered that the degree of sex role stereotyping increased with the grade level of the reading text.

Effects of Stereotypes on Memory

There can be no doubt that traditional sex role stereotypes are prevalent in children's reading materials. Yet, despite massive evidence documenting the existence of these stereotypes, there has been little study of the effects of sex role stereotypes on children's memory or comprehension of story content. At present, only one study has attempted to examine the influence of sex-typing on children's memory for story information. Jennings (1975) presented 32 preschool boys and girls with two stories, each featuring a major

character of the subject's own sex. However, in one story the main character exhibited stereotypic sex role behavior, while in the other story the character behaved in a manner considered typical of the opposite sex. The stories were told with the aid of hand-painted figures, depicting the major themes. Immediately after the stories, and two days later, each child was tested for his/her recall of the story themes.

Jennings predicted superior recall of the non-stereotypic sex role story, assuming that memory would be enhanced by the "novelty" of the main character's behavior. Mean recall scores in both conditions appeared to support her predictions. Overall, the children remembered significantly more of the themes associated with the non-stereotypic story than those associated with the stereotypic story. However, Jennings' results also indicated that male subjects from different backgrounds responded differently to the stories. While boys from a lower class day care center remembered more of the novel themes, middle class boys recalled more information from the stereotypic sex role story.

Another interesting finding of Jennings' research was the active disapproval of the non-stereotypic sex role story by the lower class boys. Many of these boys labeled the story (about a male dancer) "stupid," and wished not to listen. These reactions were thought to be a product of the stricter sex role socialization of lower class

children, as well as the more rigid cultural sanctions for masculine behavior. In view of the boys' attitude, it may actually appear surprising that they remembered more of the non-stereotypic content. However, possibly the male character's behaviors were so discrepant from the lower class boys' conceptions of masculinity that they remembered them more clearly. Such active disapproval, in its more extreme form, might also result in a systematic tendency to ignore information which conflicts with prior expectations. Of relevance are observations which indicate that nine- and ten-year-old boys often avoid stories about feminine interests and activities (Harris, 1970; Norvel, 1973).

In establishing the limits to which one can generalize from Jennings' experiment, it becomes necessary to consider the age level of her participants. Although four- and five-year-olds exhibit a relative awareness of sex role expectations, their knowledge of the content of sex role stereotypes increases with age (Williams et al., 1975). Studies of children throughout childhood and adolescence have demonstrated both gradual increases in the extent of stereotyping, and decreases in the variability of stereotyping, as a function of age (Emmerich, 1961; Emmerich, Goldman, & Shore, 1971). Males, in particular, have been found to express a growing preference for same-sex toys and role activities (Maccoby & Jacklin, 1974). These

findings suggest that modifications in sex role preferences and perceptions of sex-appropriate behavior may influence the child's acquisition of sex-typed information.

Additional limitations of Jennings' research study result from certain aspects of her methodology. One noticeable weakness in the experiment was the failure to develop story themes based upon the sex role stereotypes of preschool children. Although the story characters aspired to occupations traditionally associated with one sex, the various themes within the story were not based on preschoolers' perceptions of appropriate masculine and feminine behavior. Thus, in some cases, behaviors labeled "stereotypic" of one sex in Jennings' stories may have actually appeared more neutral or non-stereotypic to the children. It is not clear, for example, why the behavior of playing with one's dog is labeled "masculine" in the stories.

Still one further limitation of Jennings' study concerns her failure to present subjects with story characters of the opposite sex. In the experiment, preschool girls heard stories about female characters, and preschool boys heard stories about male characters. Thus, the results of the study failed to provide information about the subjects' memory for stereotypic and non-stereotypic behaviors associated with members of the opposite sex. It might also be noted that the content of each story was restricted solely to stereotypic or

non-stereotypic behavioral themes. In their everyday reading, children are more likely to encounter stories about characters of both sexes, who exhibit some non-stereotypic as well as stereotypic traits and behaviors.

In contrast to Jennings' study, Maccoby and Wilson (1957) examined children's differential memory for film content depicting both male and female characters. The researchers sought to determine how similarity between the observer and the model influenced the sexes' memory for specific content. In their experiment, seventh grade students viewed a dramatic movie in which male and female actors performed a variety of interpersonal behaviors (e.g., aggressive, romantic). Experimental measures of both recall and recognition were administered one week after the children viewed the film.

The results of this experiment indicated that children were somewhat more likely to remember the behaviors and verbalizations of actors of their same sex. However, the tendency to learn more about a same-sex actor was also related to the sex-appropriateness of the actor's behavior. Thus, on both recall and recognition tests, boys remembered more of the hero's aggressive behaviors than girls, and girls remembered more of the heroine's romantic behaviors than boys. Moreover, the findings revealed that both sexes recalled more of the aggressive than romantic behaviors of male actors, and more of the romantic than aggressive behaviors of female actors.

While recognition scores failed to provide full support for the latter finding, the overall results suggest a bias in children's memory for film content. In this case, it appears that children displayed differential memory for the stereotypic sex role behaviors of film actors.

Research outside the field of child development has also been concerned with the role of prior expectations in the acquisition of new information. In general, these studies have emphasized the constraining effects of stereotypes in the face of ambiguous or contradictory evidence. A number of experiments have shown that once individuals form a stereotype about a specific individual or group, they neglect to integrate discrepant information. This tendency to adhere to prior expectations, regardless of conflicting evidence, has been demonstrated in experiments on impression formation in person perception (Anderson, 1965; Hempel, 1976; Wishner, 1960) and clinical diagnosis (Chapman & Chapman, 1967; Meehl, 1960; Rubin & Shontz, 1960).

It thus appears that sex role stereotypes may have one of three possible effects upon the individual's memory for new material. On the one hand, sex role stereotypes may provide organizational frameworks which facilitate the acquisition of new information. The possession of generalized expectancies about the characteristics of each sex may aid in the processing of sex-related information, and consequently reduce the strain on memory capacity. Thus,

individuals may selectively remember stereotypic information, and disregard evidence which fails to confirm prior expectations. A second possibility is that sex role stereotypes focus the individual's attention on novel or unexpected events. Given a set of generalizations about the members of each sex, discrepant information may prove surprising or disturbing. Such inconsistency may result in the better encoding and subsequent retention of non-stereotypic events. A third and final possibility is that children's sex role stereotypes have no impact on their memory for stereotypic and non-stereotypic information. Generalized expectancies about the characteristics of males and females may fail to influence the storage and retrieval of sex-related content.

The literature on stereotyping has also suggested that memory for information is influenced by the degree of the individual's adherence to existing stereotypes. Individuals characterized by a high level of stereotypy appear more likely to display systematic bias in their memory for new information (Hempel, 1976). Research has indicated that beginning at age four, boys become increasingly more sex-typed than girls, and are also more likely to avoid sex-inappropriate activities. These findings suggest that boys should exhibit greater stereotypy in their memory for story content than should girls.

Methodological Issues

A review of the previous research has produced conflicting evidence concerning the effects of stereotypes on memory. However, in view of the diversity of methodologies employed, this outcome is not particularly surprising. Studies examining memory for stereotypic and non-stereotypic content have included subjects from a wide range of age levels, ranging from early childhood (Jennings, 1975) to pre-adolescence (Maccoby et al., 1957) to adulthood (Hempel, 1976; Hyman, 1975). Furthermore, a variety of techniques have been used to present subjects with information about characters or stimulus persons. Included within this category have been: descriptive passages about individuals (Hyman, 1976); stories with picture props (Jennings, 1975); slides pairing faces with behavior statements (Hempel, 1976) and full-length entertainment movies (Maccoby et al., 1957).

Another source of variation in the research has been the method employed to test memory. A majority of the experiments on stereotypes have used one of the standard tasks of recognition or recall. For example, Jennings (1975) measured recall of story content; Hempel (1976) measured recognition of behavior-face pairings; and Maccoby et al. (1957) employed a combination of these techniques. Major differences in the demands of memory tasks may have contributed to differences in the findings. While recognition tasks require

the verification of learned material, recall tasks require its reproduction. This difference may have affected the manner in which stereotypic and non-stereotypic information was retrieved from memory.

Still another difference in the research on stereotyping and memory has been the "nature" of the information under investigation. Most studies have measured subjects' memory for either the traits or behaviors of stimulus persons. Comparisons of the results of these studies have often assumed that there is a high degree of similarity between these types of information. However, in actuality, it appears that traits and behaviors vary significantly in their power to communicate information. Whereas behaviors describe concrete, observable events, traits are abstract and generalized summaries of many behavioral instances. Rothbart (1975) has noted that traits contain an "evaluative" component, rendering them more open to misinterpretation. Similarly, Rodin (1972) has found that trait descriptions are relatively less informative than behavior statements. Taken together, these factors suggest that memory for behavioral information is superior to memory for personality traits.

Thus, in designing an experiment to measure the impact of stereotypes on memory, the following four factors must be considered: (1) the age of the subjects; 2) the type of memory task; 3) the medium

for presentation of stereotypic and non-stereotypic content; and 4) the nature of the information under study. A systematic investigation of this issue requires that each of these variables be manipulated or controlled.

Purpose of the Present Study

A major objective of this study was to determine children's responses to sex-typing in their literature. To fulfill this objective, the study examined fifth grade children's comprehension of selected experimental reading material. Fifth grade students were chosen as the subject group in this experiment on the basis of their general competency in reading, as well as their acceptance of conventional sex role stereotypes (Gentry, Cruse, & Sugawara, 1976; Hartley, 1959; Iglitzin, 1972).

The specific purposes of this research were threefold. First, the study attempted to determine if there was a systematic bias in children's memory for stereotypic and non-stereotypic sex role story content. In order to achieve this goal, it was necessary to utilize stories which had been based upon the sex role stereotypes of the subject population. In this experiment, it was predicted that subjects would exhibit better memory for the stereotypic traits and behaviors displayed by story characters of both sexes. This prediction was based, in part, upon an earlier study which demonstrated

children's differential memory for sex appropriate film content (Maccoby et al., 1957). The results of experiments in the areas of impression formation and clinical diagnosis also provided support for this hypothesis.

A second purpose of this study was to determine whether male and female subjects were equally susceptible to the effects of stereotypic and non-stereotypic sex role content. A number of studies have indicated that males exhibit more pronounced sex role preferences, and are more likely to avoid activities associated with the opposite sex (Maccoby et al., 1974). On the basis of this research, it was hypothesized that males would exhibit greater stereotypy in their memory for story information than would their female counterparts.

A third and final purpose of this study was to examine children's memory for different types of story information. Specifically, the study compared children's memory for the characters' behaviors with their memory for the characters' traits. Since behaviors have been found to be more informative than traits, and less susceptible to misinterpretation, it was hypothesized that children would exhibit more accurate memory for the behaviors of story characters.

2

METHOD

Subjects

The sample was composed of 24 male and 24 female white, fifth grade students from a public elementary school in Corvallis, Oregon. Teachers indicated that all subjects were reading textbooks on the fifth grade level, and had no recent histories of reading or learning disabilities. Mean ages of the male and female subjects were 130.5 months and 125.3 months, respectively. All subjects were members of intact families and had fathers who were currently employed. Subjects recorded their fathers' occupations on a general questionnaire, and these entries were classified according to categories on Warner's Revised Occupational Rating Scale (see Appendix A for complete scale). A distribution of the sample, based on Warner's ratings of paternal occupations, is presented in Table 1.

Insert Table 1 about here

Materials

A set of four stories was developed for the purpose of this experiment. The stories were similar in difficulty, and their vocabulary did not exceed the fifth grade reading level, as indicated by the Lorge-Thorndike Word List (Lorge and Thorndike, 1944). The

Table 1
Frequency of Subjects with Fathers in Various Categories of
Warner's Revised Occupational Rating Scale

Category	Male subjects	Female subjects
I. Professionals and owners of large businesses	4	3
II. Semi-professionals and smaller officials of large businesses	7	8
III. Human service workers, clerks, and kindred workers	3	3
IV. Skilled workers and owners of trade businesses	3	3
V. Medium skilled manual workers and protective service workers	6	6
VI. Semi-skilled workers	1	1
VII. Unskilled workers	0	0
Total	24	24

stories were approximately 750 words in length (2 1/2 double-spaced type-written pages), and were modeled after passages in fifth grade reading texts. A readability computer program, which scored passages using five standardized reading measures (Spache, Dale-Chall, Danielson-Bryan, Fry, and Flesch Reading Ease), indicated that the vocabulary and grammatical structure of the experimental stories were approximately one year below those of the children's fifth grade reading text.

Each of the experimental stories featured one major male and one major female character. Within each story, each major character exhibited two masculine traits and behaviors, and two feminine traits and behaviors. The stories were written to include a set of 60 stereotypic traits and behaviors which were obtained in an earlier investigation of children's sex role stereotypes (Gentry et al., 1976). In this study, fourth grade students were presented with a list of traits and behaviors, and were asked to indicate whether each item was characteristic of "boys," "girls," or "both boys and girls." Items adopted for use in the stories were those traits and behaviors which were viewed as typical of "boys" or "girls" by over 65% of both sexes. Since the experiment required 16 stereotypic traits and behaviors for each sex, and the previous study yielded only 14 masculine and feminine traits, two masculine and feminine traits were randomly selected

for use in two stories. A complete list of the items is presented in Table 2.

Insert Table 2 about here

For each of the four experimental stories, a parallel version was produced by reversing the names of the major male and female characters. This procedure was adopted to prevent biasing in the assignment of characteristics to specific story characters. Each subject in the experiment read two stories. Stories were counter-balanced across presentation order, and appeared an equal number of times in the experiment.

In addition to the stories, four separate recognition tests were developed to measure children's memory for individual story content. Each test consisted of 16 questions, requiring the child to indicate the story character who was associated with a particular trait or behavior.

A short questionnaire, covering the child's general background and reading preferences was also used. This questionnaire served as a distractor task, being presented after the stories and before the recognition tests (see Appendix B for a copy of the questionnaire).

Table 2

Traits and Behaviors Assigned to Boys or Girls by Over 65%
of Male and Female Fourth Grade Students

<u>Behaviors</u>	
<u>Boys</u>	<u>Girls</u>
Plays roughly	Sews
Lifts heavy rocks	Dresses up in good clothes
Fixes a broken bike	Picks flowers
Builds things	Comforts a young child
Takes things apart	Cooks on the stove
Digs a hole	Giggles a lot
Plays baseball	Cleans a dirty room
Climbs trees	Remembers to say please
Forgets to do something	Runs away from scary places
Shouts loudly	Needs help moving tables
Explores strange places	Waits without complaining
Tries to win at sports	Worries about things
Gets clothes dirty	Warns others not to get hurt
Hides when others come to visit	Plays indoors
Interrupts when others are talking	Watches other children play
Goes places alone	Shares with others
<u>Traits</u>	
<u>Boys</u>	<u>Girls</u>
Tough	Sweet
Powerful	Gentle*
Messy	Graceful
Careless*	Neat
Strong	Kind*
Noisy	Quiet
Rude	Polite
Bold	Careful
Restless	Patient
Anxious	Romantic
Brave	Weak
Athletic	Afraid
Adventurous*	Shy
Active	Helpless

*Items used in two stories.

Procedure

One day prior to testing, fifth grade teachers informed their students of the upcoming reading activity. The students were told that some individuals from the university wished to determine the kinds of stories children liked to read. On the actual day of testing, two female experimenters were introduced to the classroom. The experimenters then distributed a booklet composed of an instruction sheet and two stories to each child. One experimenter read the following instructions aloud while the students read along silently:

We have given you two short stories. Please read both the stories at your normal reading rate. Read each story only once. After you have finished reading the first story, please go on to the second. When you have finished reading the second story, turn your paper over. Then we will ask you to answer some questions about both stories.

Do not worry if others finish faster than you. Some stories take longer to read than others. Remember, as soon as you finish reading each story once, you should turn your paper over. Then someone will come over and give you a set of test questions.

Do you have any questions?

Immediately after each child had finished reading the stories, an experimenter collected the booklet, and gave the child a second set of materials. The first page was a brief questionnaire, seeking general information about the child's background and reading preferences. A note at the bottom of the questionnaire instructed the child to go on to page 2 when he/she had finished.

Page 2 presented instructions for the two short tests on the content of each story. These directions are presented below:

Now we would like you to answer some questions about the two stories you read earlier. There is a separate test for each story. The names of the two children in the story will be at the top of each test.

Below these names you will see a list of 16 questions. The questions will ask you to remember who did something, or to remember who acted in a certain way. After each question, we want you to fill in the name of one child in the story. Please answer every question, even when you are not sure of an answer.

You will be finished when you have filled out the answer sheets for both of the stories. When you have finished, please raise your hand.

After the child read the questions, he/she began working on the tests. When both tests were completed, the child raised his/her hand, and one of the experimenters collected the test booklet. The average time for administering both the stories and the tests was forty minutes.

RESULTS

Each of the 48 subjects completed two recognition tests on the two experimental stories. The tests included two questions from each of eight different content categories. Category 1, for example, tested content which attributed masculine traits to male story characters. Categories 1, 4, 5, and 8 were labeled stereotypic content categories, whereas categories 2, 3, 6, and 7 were labeled non-stereotypic content categories. A list of the eight story content categories is given below:

1. Masculine trait - Male character
2. Masculine trait - Female character
3. Feminine trait - Male character
4. Feminine trait - Female character
5. Masculine behavior - Male character
6. Masculine behavior - Female character
7. Feminine behavior - Male character
8. Feminine behavior - Female character

A pairwise t-test comparison of subjects' total scores on the first and second recognition tests revealed no significant order effect. Consequently, the scores on the two recognition tests were pooled for each subject. The dependent measure was the number of correct responses in each content category, with the range of possible scores from 0 to 4. Mean scores for male and female subjects in each of these content categories are presented in Table 3.

 Insert Table 3 about here

Table 3
Mean Number of Correct Responses of Subjects
in Story Content Categories

	Male subjects ^a			
	Masculine traits	Feminine traits	Masculine behaviors	Feminine behaviors
Male story character	3.21	1.92	3.62	2.50
Female story character	2.37	3.50	2.50	3.58
	Female subjects ^a			
	Masculine traits	Feminine traits	Masculine behaviors	Feminine behaviors
Male story character	3.17	2.09	3.58	2.67
Female story character	2.79	3.29	2.50	3.67

^a_n = 24 subjects.

In order to determine whether the data satisfied the assumptions of analysis of variance, tests of normality and homogeneity of variance were performed. Results indicated that the basic assumptions had been met. A 2 (Sex of Subject) \times 2 (Sex of Story Character) \times 2 (Sex-typing of Characteristic) \times 2 (Nature of Information) analysis of variance was then performed on recognition scores (see Appendix C). Results of the analysis revealed a significant main effect of nature of information, $F(1, 46) = 12.30$, $p < .005$. As hypothesized, children remembered significantly more of the story characters' behaviors ($M = 3.08$) than the characters' traits ($M = 2.79$). A significant main effect of sex of story character was also obtained, $F(1, 46) = 10.73$, $p < .005$, indicating that children displayed better memory for the characteristics of female characters ($M = 3.08$) than for those of their male counterparts ($M = 2.84$). None of the other main effects reached significance.

Of major interest in this experiment was the interaction between sex of story character and sex-typing of characteristic. The analysis revealed a highly significant interaction between these two variables, $F(1, 46) = 90.58$, $p < .001$. This interaction, illustrated in Figure 1, indicates that children remembered more of the masculine sex-typed characteristics of male story characters ($M = 3.40$) and more of the feminine sex-typed characteristics of female characters ($M = 3.51$). Thus, as predicted, the children displayed a systematic bias in their

retention of sex-typed story content. Information consistent with conventional sex role stereotypes was remembered significantly better than inconsistent information. The mean recognition score for all subjects in the combined stereotypic content categories was 3.46, whereas the mean score in the combined non-stereotypic categories was 2.42.

 Insert Figure 1 about here

The analysis of variance also revealed a significant interaction between sex of story character and nature of information, $F(1, 46) = 6.95$, $p < .025$. This interaction, shown in Figure 2, indicates that children remembered the traits and behaviors of female characters, and the behaviors of male characters, with approximately equal facility. However, their memory for the traits of male story characters ($M = 2.59$) was comparatively poor. Data from Table 3 indicate that this result is due primarily to the subjects' low proficiency in remembering the feminine traits of male characters ($M = 2.01$). In fact, both male and female subjects obtained lower scores in this content category (i. e., Feminine trait - Male character) than in any of the remaining seven categories. The mean recognition score of male subjects in this category was 1.92, whereas the mean recognition score of female subjects was 2.01.

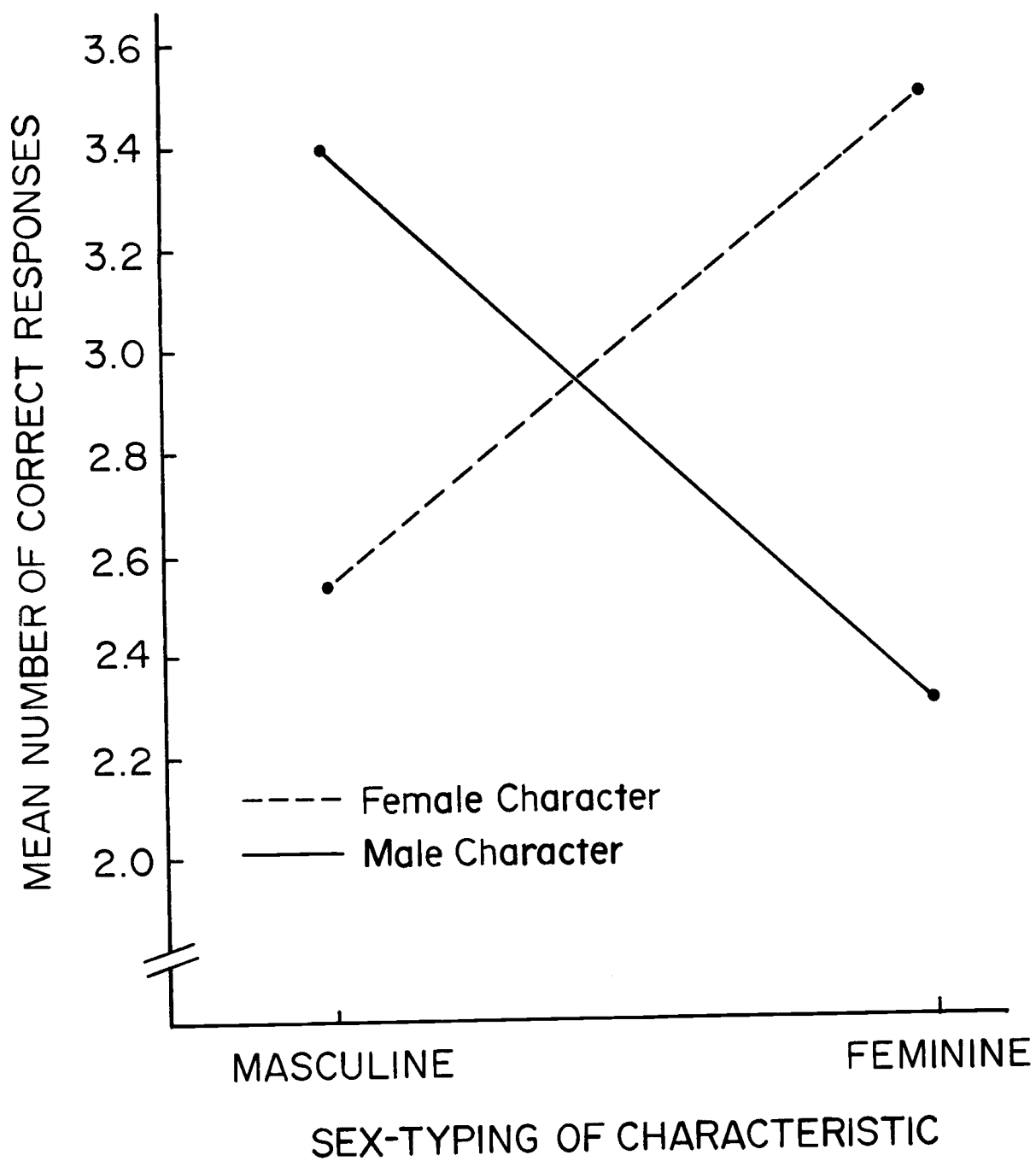


Figure 1. Mean number of correct responses for masculine and feminine characteristics attributed to male and female story characters.

 Insert Figure 2 about here

It was originally hypothesized that there would be a significant interaction between sex of subject, sex of story character, and sex-typing of characteristic. Specifically, male subjects were expected to exhibit greater stereotypy in their memory for story content than female subjects. Examination of the means in Table 3 reveal that males obtained higher scores than females in three of the four combined stereotypic content categories. On the other hand, females performed as well or better than males in all four of the non-stereotypic content categories. However, the predicted interaction did not reach significance, $F(1, 46) = 1.21$, n.s. All other interactions also failed to reach significance.

As indicated earlier, the social class variable was not directly manipulated in the present investigation. The predominantly "middle class" character of the subjects' community suggested that children's family backgrounds would be relatively homogeneous. However, the data in Table 1 reveal a widespread range of paternal occupations on Warner's Revised Occupational Rating Scale (Warner, 1960). Consequently, an attempt was made to compare the performance of subjects in two general socioeconomic status levels. Children with fathers in categories 1 through 3 on Warner's Scale were assigned to Level 1,

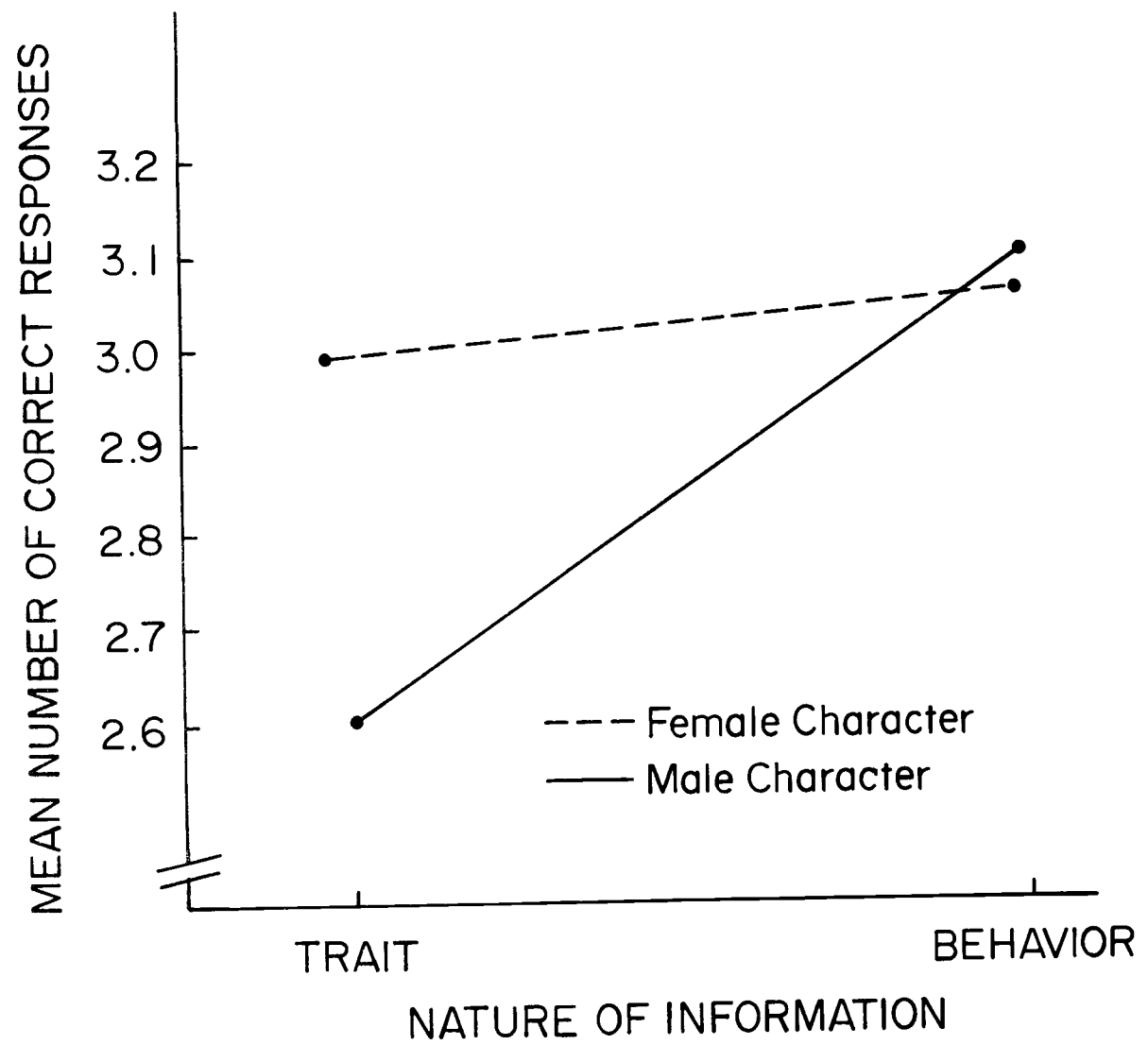


Figure 2. Mean number of correct responses for traits and behaviors attributed to male and female story characters.

while children with fathers in categories 4 through 6 were assigned to Level 2. Children in Level 1 generally had fathers in business or the professions, whereas children in Level 2 had fathers in the manual trades or service occupations. In both samples of boys and girls, there were a total of 14 subjects in Level 1 and 10 subjects in Level 2. The mean recognition scores for subjects in each of these levels are presented in Table 4. Pairwise t-test comparisons of boys' and girls' scores in the stereotypic and non-stereotypic content areas revealed no significant differences between the two socio-economic groups.

Insert Table 4 about here

Table 4
Mean Number of Correct Responses of Subjects
in Two General Socioeconomic Levels

Male subjects			
Socioeconomic level	n	Stereotypic sex-role content	Non-stereotypic sex role content
Level 1 ^a	14	13.9	9.1
Level 2 ^b	10	14.3	10.0
Female subjects			
Level 1 ^a	14	14.1	10.0
Level 2 ^b	10	13.4	10.0

Note. Maximum possible correct = 16.

^a Subjects with fathers in categories 1-3 on Warner's Occupational Rating Scale.

^b Subjects with fathers in categories 4-6 on Warner's Occupational Rating Scale.

DISCUSSION

Memory for Stereotypic and Non-Stereotypic Sex Role Content

The major objective of this experiment was to determine how stereotypes influence children's processing of story information. Specifically, the experiment examined children's memory for the stereotypic and non-stereotypic sex role characteristics exhibited by male and female story characters. On the basis of previous research in the areas of observational learning and cognitive psychology, it was hypothesized that story content consistent with existing sex role stereotypes would be most accurately remembered.

The results of this experiment reveal a systematic tendency for both sexes to remember more of the masculine sex-typed characteristics of male characters, and more of the feminine sex-typed characteristics of female characters. This pattern of results is generally representative of those obtained in an earlier experiment by Maccoby et al. (1957), although the latter study measured children's memory for film content. Both male and female film viewers recalled more of the aggressive than interactive (i. e., romantic) behaviors of male actors, and more of the interactive than aggressive behaviors of female actors. These findings suggest that the children displayed

selective memory for the stereotypic sex role behaviors of film actors. However, the results of a recognition test based on the same film offered only partial support for this finding.

The present experiment suggests that children's sex role stereotypes facilitate their processing of stereotypic information about male and female story characters. General support for this hypothesis can be found within the field of cognitive psychology. Experiments in a variety of contexts, such as impression formation and clinical diagnosis, have revealed that prior expectations influence the individual's subsequent observations. In each of these areas, it has been found that subjects often categorize groups or individuals on the basis of limited information, and then adhere to these categories. These categories, or stereotypes, appear to reduce the individual's efficiency in processing discrepant information.

The results of the present experiment fail to support the hypothesis that novel, or non-stereotypic, information is remembered more accurately than stereotypic information. As such, they are strikingly different from the results of an earlier study using preschool children. Jennings (1975) found that, overall, subjects remembered more about a character who displayed non-stereotypic sex role behavior than about a character who engaged in stereotypic behavior. However,

unlike the majority of subjects, middle class boys actually remembered more about the stereotypic character. This pattern of responding is similar to the performance of subjects in the present investigation.

To summarize, the present experiment reveals that fifth grade children exhibit superior memory for stereotypic sex role content. Judging from the magnitude of this finding, it can be speculated that the stereotype provides the reader with an organizational framework which is utilized in comprehension. According to this theory, children perceive the male and female characters within their stories as representative members of the categories of "boys" and "girls." Assignment of story characters to these categories presumably activates a set of generalized expectations about the character's personality traits and behaviors. These expectations then focus attention on certain aspects of the incoming material, and provide a structure which facilitates subsequent integration. Thus, information which is consistent with the characteristics of sex role stereotypes should be more efficiently processed than inconsistent information.

If stereotypes facilitate the processing of consistent information, then the results of Jennings' (1975) preschool study require further examination. The observed discrepancy in the findings of this study and that of Jennings may reflect either methodological problems or larger theoretical issues. With respect to methodology, it is important to recall that Jennings failed to obtain normative data on the sex

role stereotypes of preschool children. Consequently, there is some question as to whether preschool subjects perceived the behavioral themes within the stories as appropriate only for members of a particular sex. However, regardless of methodological problems, it must be recognized that a more comprehensive theory concerning the effects of stereotypes on memory requires the consideration of additional variables. In predicting children's memory for stereotypic and non-stereotypic story content, one might examine such factors as the structure of the experimental stories, the nature of the memory task, and various characteristics of the subjects (e.g., age, socio-economic status).

Thus, in comparing Jennings' study with the present experiment, it becomes especially important to emphasize differences in the complexity of the story structures. These differences may have had a major effect upon the manner in which subjects processed story material. In the preschool study, for example, subjects were presented with stories in which a single character displayed six stereotypic or non-stereotypic sex role behaviors. Moreover, the stories were told with the aid of pictures used to depict behavioral themes. Under conditions in which subjects must remember limited amounts of consistent information, there appears less need to adopt an organizational strategy (Miller, 1956). However, in contrast to the preschool experiment, fifth grade subjects were presented with

stories in which major characters of both sexes displayed numerous stereotypic and non-stereotypic sex role characteristics. Exposure to a large variety of facts about multiple story characters may increase the necessity for utilizing an organizational strategy in processing information. Under such conditions, the stereotype may help the individual to cope with large informational inputs.

It is also possible that developmental differences contributed to the differential patterns of responding in the preschool and fifth grade samples. Recent studies have indicated that children's knowledge of sex role stereotypes is only partially developed in the preschool years (Flerx et al., 1976; Williams et al., 1975). Furthermore, as children grow older, they exhibit increasing ability to use organizational strategies as aids to memory. Research indicates that older children are more likely to group items which must be remembered according to categories, and this strategy is related to the number of items subsequently recalled (Moley, Olsen, Hawles, and Flavell, 1969). Moreover, among American children, there appears to be a dramatic increase in the ability to use organizational strategies at age seven (Flavell, 1970). Thus, developmental differences in memory skills, as well as knowledge of sex role stereotypes, may influence children's use of the stereotype as an organizational framework. In order to test this theory, researchers may wish to replicate the present experiment with a wider range of age levels. The more complex story

structure would presumably offer advantages to children capable of using an organizational strategy.

Memory for Traits and Behaviors

In addition to exploring the effects of stereotypes on comprehension, the present study sought to examine children's memory for different types of story information. The data reveal that children of both sexes displayed more accurate memory for the behaviors of story characters than for their traits. This finding is supported by previous studies (e. g., Rodin, 1972) which suggest that the "concrete" nature of behavioral statements renders them easier to remember. On the other hand, the abstract quality of traits, and their tendency to generate evaluative reactions, may seriously diminish their communicative value. Thus, although traits have the advantage of summarizing many behavioral instances, they offer increased opportunities for misinterpretation. Of course, it may be argued that message length is the critical factor influencing superior memory for the behavioral information. In this experiment, trait descriptions consisted of a single adjective, whereas behavior descriptions ranged from one to six words. While researchers have failed to explore the informative value of traits and behaviors for children, Rodin (1972) has found no relationship between the factor of message length and the informativeness of information in studies of adults.

One very recent study has also examined the recall of children's stories by children and adults (Mandler & Johnson, 1977). Although the research focused on recall of information within specific categories of "story grammar," the data permit a general view of subjects' memory for the characters' traits and behaviors. In this study, the recall of descriptive adjectives and adverbs was relatively poor in all age groups. Furthermore, all subjects exhibited better memory for the more concrete story events (e.g., beginnings, outcomes) than for the internal reactions of the major characters.

Comparison of Boys' and Girls' Memory for Story Content

A third objective of this study was to determine whether children of both sexes are equally susceptible to bias in their comprehension of story content. On the basis of research revealing more pronounced sex role preferences in elementary school boys (e.g., Ferguson et al., 1966; Hartley, 1959; Sutton-Smith et al., 1963), it was hypothesized that boys would exhibit greater stereotypy in their memory for story information than would girls. However, contrary to predictions, the two sexes did not differ markedly in their memory for stereotypic and non-stereotypic material. Although the data suggest male superiority in the recognition of stereotypic information, and female superiority in the recognition of non-stereotypic information, the difference is not significant. This finding suggests that despite differences in the

strength of sex role preferences, the sexes are comparable in their ability to discriminate between the stereotypic characteristics of males and females. Indeed, a recent investigation suggests that knowledge of sex role stereotypes develops along a similar pattern in both boys and girls (Williams et al., 1975). Thus, although boys exhibit a stronger preference for their own sex role, they must be aware of the feminine role in order to reject it.

Differential Memory for the Traits and Behaviors of Male and Female Characters

While there was no evidence of sex differences in the subjects' responses, the results indicate that children displayed differential memory for the characteristics of male and female story characters. Specifically, the subjects remembered more information about female characters than about their male counterparts. However, an examination of the data reveals that this effect can be attributed to the subjects' poor memory for the feminine traits of male characters. Subjects were notably less adept in remembering the feminine traits of male characters than in remembering the masculine traits of female characters. This finding is particularly interesting in view of societal definitions and sanctions for appropriate sex role behavior in males and females. Sociocultural theorists, for example, have emphasized the greater clarity, power, prestige, and attractiveness of the male role (Kagan, 1964; D'Andrade, 1966). Social learning theorists have

also focused on the male role, suggesting that males experience greater pressures to conform to sex role standards (Mischel, 1970). Moreover, research indicates that the failure to conform to sanctions governing sex-appropriate behavior is more likely to result in punishment for boys than girls (Fling et al., 1972; Lansky, 1967).

Both sociocultural and social learning theorists suggest that elementary school children will be more keenly aware of the prescriptions and proscriptions associated with the masculine role. While children also possess knowledge about appropriate feminine characteristics, they appear more willing to accept nonconformity in the female sex. Indeed, a great deal of evidence suggests that tomboys are tolerated in the elementary school years, while sissies are scorned and rejected (Hartley, 1959). Thus, it would appear that males with feminine traits are more deviant from children's stereotype of boys, than females with masculine traits are deviant from their stereotype of girls. These differential expectations for sex role conformity in members of each sex appear likely to influence children's processing of new information. In this experiment, it might be concluded that the subjects' poor memory for the feminine traits of male characters reflects a greater reluctance to integrate non-stereotypic trait information about the male sex.

The previous explanation would suggest that the non-stereotypic characteristics of male characters should be less accurately

remembered than the non-stereotypic characteristics of female characters. However, examination of the data reveal that this is only true of trait information. Subjects were just as likely to remember the masculine behaviors of female characters as they were likely to remember the feminine behaviors of male characters. This discrepancy in the subjects' responses to non-stereotypic trait and behavioral information may be the product of a number of factors, including the lower informative value of traits in general (Rodin, 1972). Moreover, a character depicted in a single non-stereotypic behavior may be perceived as less deviant than a character who exhibits a non-stereotypic pattern of responding (i. e., trait). However, it is interesting to note that the subjects' memory for the non-stereotypic traits of female characters is equally as good as their memory for the female characters' non-stereotypic behaviors. This finding suggests that differential expectations for sex role conformity in males and females may also be involved.

On the basis of these results, it might be predicted that a more difficult task would reveal differential memory for the non-stereotypic behaviors of male and female story characters. In order to test this prediction, the experiment might be repeated with more complex stories, or with longer delays between the stories and the comprehension task. Research suggests that even highly discrepant information can be maintained for a short period after its introduction.

However, there is some evidence which suggests that over the course of time, unusual or novel information is less stable than information which is consistent with prior expectations (Mandler & Parker, 1976). Consequently, given children's differential expectations for sex role conformity in males and females, longer delays may have a proportionately more negative effect on children's memory for the non-stereotypic characteristics of male characters. Increases in the difficulty of the task would also be predicted to produce an overall diminution in children's memory for the non-stereotypic story content.

Implications for Children's Education

Certainly the most important finding of this experiment is that children exhibit selective memory for the stereotypic sex role content in their reading material. This discovery is thought to have important implications concerning the introduction of non-sexist reading materials in elementary school classrooms. A number of educators have advocated that primary readers be revised to include characters who display a broader range of personality traits and behaviors. It is assumed that such literature will promote the eradication of conventional sex role stereotypes and will foster the development of more flexible role options. However, given that children exhibit selective memory for the stereotypic content in their reading material, the proposed gains

of curricular intervention may fall short of actualization. Indeed, the differential processing of information about sex-typed characteristics will seemingly contribute to the maintenance of existing stereotypes. This finding does not diminish the importance of utilizing non-sexist materials, but does suggest the need for additional methods to promote unbiased comprehension.

One potential method for reducing biases in comprehension would be an open and direct approach to the issue of sex role stereotyping. It is reasonable to assume that a decline in sex-typed attitudes would reduce selective memory for stereotypic sex role content. In order to pursue this approach, curricula may be designed to develop children's awareness of their own stereotyped beliefs. In addition to adopting non-sexist instructional materials, discussions may be used to explore differential expectations for masculine and feminine role behavior, as well as career options available for men and women. It also appears important for teachers to solicit children's reactions to examples of sex role stereotyping in their literature. Techniques which direct attention to both the stereotypic and non-stereotypic behaviors of story characters can do much to stimulate dialogue in which old assumptions are questioned.

Programs attempting to minimize the effects of sex role stereotypes on memory may also focus on the development of alternative strategies for organizing story content. One plausible conclusion of

the present experiment is that children organize story information on the basis of the character's sex. Therefore, in order to reduce this phenomena and increase the efficiency of memory, it may be necessary to introduce alternative means for organizing new material. For example, children might be informed that a particular story is structured around the attainment of a specific goal. Each character is said to perform a number of behaviors, with each one essential to the actualization of the goal. This emphasis on mutual cooperation in goal attainment, rather than on the sex of the major characters, may reduce the effects of sex role stereotypes on children's comprehension.

General Summary and Directions for Future Research

The major finding of this experiment is that children exhibit selective memory for stereotypic sex role content in their reading material. This pattern of responding is presumed to be a product of utilizing the sex role stereotype as an organizational framework. According to this theory, stereotypes focus attention on information consistent with prior expectations, and provide a structure which facilitates efficient processing of this input. In addition to this finding, the experiment reveals that children are less proficient in remembering trait descriptions than behavioral descriptions, and are particularly unlikely to remember content which attributes feminine traits to male story characters. The latter finding may reflect the subjects' greater

expectations for sex role conformity in males than females, as well as the lower informative value of traits in general.

If the present conceptualization of the sex role stereotype is correct, and the stereotype does provide the individual with an organizational framework, then it should be possible to influence children's memory for story material by manipulating their expectations about the major characters. Specifically, children who perceive the character's sex role as non-stereotypic should display more accurate memory for the non-stereotypic content. This hypothesis is presently being tested in a second experiment, in which children's stories are alternately introduced with stereotypic and non-stereotypic descriptions of the major characters. Future experiments may also wish to examine the effects of presenting introductory passages about characters who exhibit androgynous sex role behaviors (i.e., characters who display both masculine and feminine behaviors). It is possible that such passages will negate the usefulness of the sex role stereotype as an organizational framework. Alternatively, the subjects may respond in a manner similar to that in the present experiment and remember proportionately more of the stereotypic introductory material.

Another possible extension of the current research would be the inclusion of a measure of recall for story information. A number of cognitive theorists, such as Hyman (1975) and Kintsch (1972) have suggested that free recall is more heavily influenced by prior

expectations than is recognition memory. Moreover, future research might address the issue of how accurately stereotypic and non-stereotypic information are retained over longer periods of time. It might be argued that stereotypic information is stronger in "associative strength," and will therefore be retained longer than non-stereotypic material. In order to test this hypothesis, subjects might be tested both immediately after the story, and after a two day delay, as in Jennings' (1975) study.

The noted lack of support for Jennings' earlier findings suggests the importance of conducting developmental research on the effects of stereotypes on memory. The extent to which variations in methodology and cognitive abilities have contributed to the differential performance of preschool and fifth grade subjects has yet to be determined. In order to resolve this issue, it appears necessary to develop a set of stories which are appropriate for a broad range of age levels. As noted earlier, these stories must be based upon the sex role stereotypes of the test population, and must include a reading vocabulary appropriate for each age level. The sheer difficulty of composing stories which meet both these criteria suggest that it may be more feasible to conduct developmental studies on children's differential memory for film content.

Future examinations of the effects of prior expectations on memory might also wish to examine the variable of social class.

Evidence from Jennings' (1975) study suggests that middle and lower class children vary in their responses to stereotypic and non-stereotypic story material. While the present study failed to reveal social class differences in performance, family backgrounds were notably more homogeneous than in the preschool study. A wider range of stereotypes might also be examined in future investigations. Stereotypes concerned with race, ethnic background, religion, and age have created significant public concern. Indeed, research which examines the differential processing of specific categories of information may help to clarify our understanding of the processes which perpetuate social stereotypes.

Finally, it should be noted that the model which has been proposed to explain superior memory for stereotypic content in the present experiment assumes that stereotypes influence children's acquisition of new information. However, there is also the possibility that children's test performance is influenced by "selective forgetting" or "response bias." Future experiments may wish to determine the extent to which this finding is produced by mechanisms which occur during the acquisition, retention, and retrieval stages of information processing.

In summary, the evidence from this study suggests that children of both sexes display selective memory for the stereotypic sex role content in their reading material. Furthermore, children are less proficient in remembering trait descriptions than behavioral descriptions, and are particularly unlikely to remember content which

attributes feminine traits to male story characters. These findings suggest that cognitive biases may contribute to the maintenance of sex role stereotypes, and may thus impede attainment of the objectives of non-sexist reading programs. Moreover, the findings emphasize the need for future research to delineate the effects of cultural stereotypes on the individual's processing of new information.

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APPENDICES

APPENDIX A

Warner's Revised Occupational Rating Scale

Rating Assigned to Occupation	Professionals	Proprietors and Managers	Business Men	Clerks and Kindred Workers, Etc.	Manual Workers	Protective and Service Workers	Farmers
1	Lawyers, doctors, dentists, engineers, judges, high- school superintendents, veterinarians, ministers (graduated from divinity school), chemists, etc. with post-graduate train- ing, architects	Businesses valued at \$75,000 and over	Regional and divisional managers of large financial and industrial enterprises	Certified Public Accountants			Gentleman farmers
2	High-school teachers, trained nurses, chiropodists, chiropractors, undertakers, ministers (some training), newspaper editors, librarians (graduate)	Businesses valued at \$20,000 to \$75,000	Assistant managers and office and department managers of large busi- nesses, assistants to execu- tives, etc.	Accountants, salesmen of real estate, of insurance, postmasters			Large farm owners, farm owners
3	Social workers, grade-school teachers, optometrists, librarians (not graduate), undertaker's assistants, ministers (no training)	Businesses valued at \$5,000 to \$20,000	All minor officials of businesses	Auto salesmen, bank clerks and cashiers, postal clerks, secretaries to executives, supervisors of railroad, tele- phone, etc., justices of the peace	Contractors		
4		Businesses valued at \$2,000 to \$5,000		Stenographers, bookkeepers, rural mail clerks, railroad ticket agents, sales people in dry goods store, etc.	Factory foremen electricians) plumbers) own business carpenters) watchmakers)	Dry cleaners, butchers, sheriffs, railroad engineers and conductors	
5		Businesses valued at \$500 to \$2,000		Dime store clerks, hardware salesmen, beauty operators, telephone operators	Carpenters, plumbers, elec- tricians (apprentice), time- keepers, linemen, telephone or telegraph, radio repairmen, medium-skill workers	Barbers, firemen, butcher's apprentices, practical nurses, policemen, seam- stresses, cooks in restaur- ant, bartenders	Tenant farmers
6		Businesses valued at less than \$500			Moulders, semi-skilled workers, assistants to car- penter, etc.	Baggage men, night police- men and watchmen, taxi and truck drivers, gas sta- tion attendants, waitresses in restaurant	Small tenant farmers
7					Heavy labor, migrant work, odd-job men, miners	Janitors, scrubwomen, newsboys	Migrant farm laborers

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APPENDIX B

Questionnaire

APPENDIX C

Summary of Analysis of Variance of Scores on Recognition Tests

Source	df	MS	F
Sex of Subject	1	.44	.36
Nature of Information	1	7.88	12.30**
Sex-typing of Characteristic	1	.44	.69
Sex of Story Character	1	3.19	10.73**
Subjects	46	1.21	---
Sex subj X Nature info	1	.02	.04
Sex subj X Sex-type char	1	.02	.04
Nature info X Sex-type char	1	1.37	2.33
Sex subj X Sex character	1	.01	.01
Nature info X Sex character	1	4.38	6.95*
Sex character X Sex-type char	1	103.15	90.58***
Subjects X Nature info	46	.64	---
Subjects X Sex-type char	46	.63	---
Subjects X Sex character	46	.30	---
Sex subj X Nature info X Sex-type char	1	.75	1.27
Sex subj X Nature info X Sex character	1	.02	.04
Sex subj X sex-type char X Sex character	1	1.38	1.21
Nature info X Sex-type char X Sex character	1	.13	.15
Subjects X Nature info X Sex-type char	46	.59	---
Subjects X Nature info X Sex character	46	.63	---
Subjects X Sex-type char X Sex character	46	1.14	---
Sex subj X Nature info X Sex-type char X Sex character	1	.75	.90
Subjects X Nature info X Sex-type char X Sex character	46	.83	---

* $p < .025$ ** $p < .005$ *** $p < .001$