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ABSTRACT

This study was designed to investigate male and female interest in babies at middle childhood and adolescence. A total of 64 middle class subjects (half 8- to 9-years-olds, half 14- to 15-year-olds) were observed individually in a 6-minute waiting room situation with an unfamiliar 6- to 10-month-old baby and mother (confederate). While the subject was unoccupied, his/her interest in the baby was observed. Each subject later filled out a sex-role self-concept questionnaire, operated a slide projector which controlled the length of time each of 30 pictures was exposed and reported the five pictures liked best. Results indicated that middle childhood girls and boys were similar in the degree and nature of interest they exhibited in babies and that sex differences began to emerge in adolescence when the girls showed a trend to greater responsiveness to babies, chose more pictures of infants among their favorites, and spent a larger percentage of their time looking at baby pictures than adolescent males. Adolescent girls also reported more enjoyment in caring for infants and felt more comfortable with the responsibility for infants than did adolescent males. Findings by age group indicated differences between middle childhood and adolescence in the mode of responsivity. Children in middle childhood were as interested in the infant as adolescents, but did more looking and less approaching in the presence of an unfamiliar baby; adolescents were less inhibited and displayed their interest more overtly. It was concluded that by adolescence, girls have adopted sex-stereotypic values such as baby interest into their behavioral repertoire. (JMB)

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Baby Responsiveness as a Sex-Stereotyped Behavior: A Developmental Study.

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Baby Responsiveness as a Sex-Stereotyped Behavior: A Developmental Study.

Investigations of children's sex-role behavior have generally been limited to the implementation of sex-roles, i.e., children's preferences for sex-typed objects or activities (Hartley, 1964). In contrast the present research explores a sex-role behavior of evolutionary significance: responsivity to babies. In order to be viable, a society has to have enough interest in its babies to nurture them to adulthood. Ethologists have suggested that the infant's innate physical and behavioral characteristics are specifically designed to encourage interest and positive nurturant responsivity (Bowlby, 1969; Eibl-Eibesfeldt, 1970; Lorenz, 1943). It is not clear, however, whether these reactions are more typical of one sex than the other (Bernick, 1966; Cann, 1943; Hess and Polt, 1960; Sternglanz et al., 1975). Nevertheless, it has been the commonly accepted view that women are more attracted to infants than are men (Harlow, 1971; Hess, 1969).

That responsivity to babies is considered a stereotypically feminine behavior is probably linked to the biological fact that females bear and nurse children and usually assume a nurturant role. Although males father children, their parenting role is more often defined in terms of their protector-provider function. Sex stereotypes which prescribe adult roles are learned at a very early age. They are tenaciously held, well-defined concepts that prescribe how each sex ought to act. They frequently carry the objectionable implication that important traits and abilities are sex-linked, inborn, and unmodifiable.

The expectancies generated by sex-role stereotypes can have a constraining effect on person-perception: not only do they limit ones observations, they often have behavioral consequences. Any pervasive, widely-shared expectation about people in some social category exerts pressure on its members to display behaviors, traits, and attitudes consistent with it.

As early as age 2-3 years, girls stereotypically believe that they (rather than boys) will grow up to take care of children (Kuhn, Nash, Brucken, 1976). With increasing age, the childs sex-role standards become more definite and closer to those of an adult (Stein and Smithells, 1969). Although attitudinal assessments have been made, it is not known at what age (if any) the sexes first differ in the degree or mode of their behavioral interest in babies. In fact, to date, no studies have attempted to assess children's reactions to a live baby. The following study provides this opportunity to children at two stages of development; middlechildhood and adolescence. Previous research on sex-role stereotypic behavior has relied heavily upon questionnaire measures, which involve a public declaration of ones attitudes and assumes that the person is an objective observer of him/herself. In this study behavioral responsivity to babies is scored directly by trained observers.

In middlechildhood, sex-roles are relatively incidental to the child's major pursuits: playing, getting along with peers, and achievement in school. During this latency age, the child is task-oriented and does not focus on the self. "The goal of sexual satisfaction, marriage and children...seems, if admitted at all by the latency child, very far away" (Sears and Feldman, 1973, p. 30). Although sex-role stereotypes have been attained, sex-specific behaviors are not demanded for most situations. In fact, there are few clear sanctions for violating stereotypes--especially for girls.

It has been alleged that girls are more interested in and responsive to all kinds of social stimuli: that they are more sensitive to interpersonal nuances, and generally more interested in people as compared to boys, who are allegedly more object and task-oriented. However, a recent review of the literature reveals no consistent differences between girls and boys in social sensitivity (Maccoby & Jacklin, 1974). In view of the absence of a sex difference in many measures of social interest, and the irrelevance of most sex-role stereotypic prescriptions to middlechildhood behavior, it is hypothesized that few, if any differences in responsivity to babies develop during this age.

By adolescence sex-role requirements have been rapidly augmented; hetero-sexual relations demand reciprocal roles. Well-established rules governing conduct, i.e., possession of appropriate traits and behaviors, facilitate these interactions. Yet uncertainty about these numerous new role demands, the salience of sexual maturation, and a heightened self-consciousness (the feeling that one has an ever-present audience) (Elkind, 1967) results in a retreat to the safety of stereotypes learned long ago. For these reasons, sex-role prescriptions become much more salient to the adolescent than they were to the middlechildhood child.

For the adolescent thrust into a confusing maze of new role demands (despite lack of autonomy) a clinging to old, established sex-role stereotypes, at least temporarily, seems the safest, most comfortable route. Thus we anticipate the development of a sex difference in baby responsiveness during the adolescent years, in line with numerous other sex differences that emerge during this stage of life (Maccoby & Jacklin, 1974; Nash, 1975).

To summarize, the following study will investigate male and female interest in babies at two stages of development: middlechildhood and adolescence. Responsiveness to babies is measured by exposing children to a live baby and objectively recording their behavioral reactions. It is hypothesized that the

sexes will begin to diverge in this sex-typed behavior during adolescence when sex-role requirements are heightened and many other sex differences emerge.

Method

Two groups of subjects aged 8-9, and 14-15 were studied. Each subject was observed in a six-minute Waiting Room situation with an unfamiliar 6-10 month old baby and mother (confederate). While the subject was unoccupied and waiting for th questionnaire to arrive, his/her interest in the baby was observed. After filling out a sex-role self-concept questionnaire, the subject was taken into another room where he/she operated a slide projector which controlled the length of time each of 30 pictures was exposed. After viewing the pictures, the subject reported the five pictures liked best.

The order of the two tasks (Waiting-Room and Visual Task) was balanced across sex, and across condition. At the end of the second task, subjects filled out a background questionnaire and were debriefed.

Sample

Sixty-four middle class subjects from the San Francisco Peninsula were studied. Half the subjects were 8-9 years old, and half were 14-15 years. Sixteen males and 16 females were in each age group. Subjects were told that the study focussed on the relationship of picture preferences to self-described questionnaire measures.

Procedure

(a) The Waiting Room Situation.

A receptionist escorted the subject into a comfortably furnished room equipped with one way mirror, and asked the subject to wait while she located a questionnaire. In the room were two confederates, a 6-10 month old baby seated in a "lo-chair-table" and his/her mother. After 6 minutes the receptionist entered and gave the subject a questionnaire to fill out.

Observers behind the one-way mirror used 6-second time-sampling to score looks, smiles, funny faces or gestures, talks, gives/shows object, proximity/touch, and the target of these behavior (adult confederate, baby). In addition, whenever the baby elicited attention by vocalizing or playing noisily, this was recorded, as was the ensuing response made by the subject.

Four scores were derived from the Waiting Room:

1. Baby Responsiveness Score a standardized composite score ($\bar{X}$ = 50, SD = 10) in which the standardized scores of each of the above seven behaviors directed to the baby, plus talking to the mother about the baby are added.

2. Distal Bids is a component of the composite and consists of the simple sum of the number of 6 second intervals in which looks, smiles, shows/gives, talks, and funny face to baby is recorded.

3. Proximal Bids is a second component of the composite. It consists of the simple sum of the number of 6 second time intervals in which the subject was within 3 feet of the baby, plus the number of time intervals in which the subject touched the baby.

4. Ignores Baby is the sum of the 6-second intervals in which the subject did not respond in either the same interval or the immediately following interval to (i) the baby's vocalization (gurgle, coo, cry etc.) or (ii) the onset of noise from the child's toy. This measure is conceptually independent of distal bids.

Inter-observer reliabilities for the behaviors which enter into the four Waiting Room scores are reported in Table 1.

Insert Table 1

(b) Visual Task.

The subject was told (s)he would view some pictures, after which (s)he would be asked to report which pictures were liked best. Thirty pictures were

presented with a slide projector that the subject operated, i.e., (s)he controlled how long (s)he viewed each picture. An Esterline Angus recorder graphed the length of time (in 1/2-seconds) the picture was on the viewing screen. After the slide show, the subject was presented with the same 30 pictures (as snapshots) mounted on a board. The subjects were asked to point to the 5 pictures (s)he liked best.

Pictures were chosen from five categories: masculine-typed objects, feminine-typed objects, neutral-typed objects, babies, children and adolescents, and adults. The order of picture presentation was derived from a Latin Square of a fixed order, in which no two adjacent pictures came from the same category. The masculine, feminine, and neutral objects were judged as such in pilot work using 25 naive raters, 13 males and 12 females aged from 6 to 18 years.

Two measures were calculated from the perceptual situation. The Picture Duration Score consists of the percentage of time spent looking at slides which were devoted to baby pictures. The Picture Preference Score consists of the number of baby pictures selected among the favorite five.

(c) Questionnaire Measures.

A new measure of children's sex-role self-description was devised for this study. In format it was similar to the Bem Sex-Role Inventory (BSRI, Bem 1974). It consisted of 15 adjectives: 5 masculine items, 5 feminine items and 5 neutral items. Subjects had to rate themselves on each adjective on a 5 point scale ranging from 1 "not at all like me" to 5 "very much like me". The masculine items included brave, mean, leader, active and strong. For each subject the average rating on these items yielded a masculinity score. The feminine items included kind, gentle, worried, warm-hearted and sensitive. For each subject the average rating on these items yielded a femininity score. Thus each subject obtained both a masculinity and a femininity score which are theoretically

independent of each other.

The children's sex-role self-description measure was pre-tested on a third grade classroom (n=27). The average scores for boys were: masculinity 3.5, femininity 3.0, while for girls masculinity 3.3, femininity 3.8. In order to check on the validity of the newly devised measure of children's sex-role self concept the 32 adolescents in the present study were administered both the BSRI and the new scale. The intercorrelations across the two scales of the masculinity and femininity scores calculated separately for boys and girls were high, ranging from 0.70 to 0.86.

A background questionnaire was also administered which contained questions concerning experience and contact with babies, and attitudes towards babies. Two questions, which are analyzed later were as follows.

1. Do you enjoy taking care of babies and toddlers? (Scored as a zero-one variable).
2. How comfortable do you feel with the responsibility of caring for a baby or toddler? (This was rated on a 3 point scale from 3 very comfortable to 1 very uncomfortable).

Results

Six dependent measures were used and their interrelationships one with the other are shown in Table 2 for 8-9 year olds, and in Table 3 for adolescents.

Insert Tables 2 and 3

Not surprisingly, the most consistent finding was the positive correlation between the Waiting Room composite score, Baby Responsiveness, and one of its components, distal bids. Proximal bids, another component of the composite also correlated positively with Baby Responsiveness. This was a strong association for adolescents and only a trend for the younger children, few of whom left their

seats while in the Waiting Room. Ignoring the baby was negatively correlated with Baby Responsiveness except for 8-9 year olds girls, for whom there was no correlation. These girls were virtually unable to ignore the infant (see Table 4); the reduced variability probably contributed to the lack of correlation. Distal bids was also negatively correlated with ignoring the baby, although the results vary from weak trends (r = -.41) to powerful association (r = -.90).

For none of the groups are the perceptual measures (Picture Preference and Picture Duration) correlated wtih each other. In addition Picture Preference is not correlated with any of the Waiting Room measures. Picture Duration, on the other hand, is correlated with Baby Responsiveness for boys, but in opposite direction for the two age groups. For adolescent boys Picture Duration is negatively correlated with Baby Responsiveness, while for 8-9 year old boys it is a positive correlation.

Sex Differences

The mean and median values of the six measures of baby interest appear in Table 4.

Insert Table 4

Since many of the variables were not normally distributed (Geary's test, D'Agostino, 1974), non-parametric statistics were used. Mann-Whitney tests (Siegel, 1956) were used to assess sex differences, and the results appear in Table 5.

Insert Table 5

For the combined sample of children (i.e., 8-9 year olds and 14-15 year olds) a clear pattern of sex differences emerged. Girls exhibited more overall interest in babies than did boys. In the presence of a live baby, girls made more distal bids and ignored the baby less. On the picture preference task girls chose more baby pictures among their favorites, and on the self-report measures girls

reported both more enjoyment caring for infants and feeling more comfortable with the responsibility for them.

As predicted, few sex differences were found among middlechildhood children. Girls and boys, 8 to 9 years old, were similar in the degree (and nature) of interest they exhibited in a live baby, as well as to pictures of babies. Eight-9 year old boys, however, ignored the live baby more than girls. The questionnaire measures were in accord with most measures in showing an absence of a sex difference for this age group.

By adolescence, however, sex differences, began to emerge as predicted. Girls showed a trend to greater responsiveness to babies, in particular in the frequency of the distal bids made to them. Responses to pictures of babies strengthen the results: adolescent girls chose more pictures of infants among their favorites and spent a larger percentage of their time looking at baby pictures than did adolescent males. Again the questionnaire items reflect the behavioral and perceptual results: adolescent girls reported more enjoyment in caring for infants and felt more comfortable with the responsibility for infants than did adolescent males.

Correlates of Baby Interest.

Four of the six dependent measures were used in a Spearman-Rank correlational analysis, with proximal bids and Picture Preference omitted due to numerous zero scores. Four correlates were used, including two sex-role measures, (masculinity and femininity) and two self report measures concerning feeling comfortable with and enjoying caring for infants. The results are shown separately by sex and age in Table 6. Overall, there are fewer significant correlations for girls than for

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Insert Table 6 about here

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boys, and with only one exception the significant correlations for girls are for

the 8-9 year olds and not among the adolescents. Among the boys most of the significant correlations are for adolescents, involving particularly the sex-role measures. As expected, for boys high scores on masculinity were associated with less interest in babies, while high scores on femininity were associated with greater interest.

Age Differences

On the composite measure of baby responsiveness no age differences were found. Adolescents exhibited the same amount of interest in a live baby as did the 8-9 year olds. However, the two age groups had different modes of relating to unfamiliar babies: more of the 8-9 year olds than the adolescents made distal bids to the baby ($z = 1.55$, $p < .05$), while more adolescents than younger children approached the baby ($z = 1.61$, $p < .05$). In addition, more adolescents than 8-9 year olds ignored the babies' bids for attention.

No age differences were found on the perceptual measures: younger and older children chose baby pictures equally often and spent equally long looking at them. On the questionniare items adolescents rate themselves as more comfortable caring for infants ($z = 1.77$, $p < .05$) than younger children, although there was no age difference in mean rating of enjoying caring for children.

Discussion

The findings suggest two noteworthy differences in baby responsiveness among children and adolescents. Whereas males and females differ in the degree of their baby interest, age confers mode differences in responsivity. Children in middle-childhood do more looking and less approaching in the presence of an unfamiliar baby. They are as interested in the infant as adolescents, but they seem reluctant

to take active measures to demonstrate their interest. Adolescents are less inhibited and display interest more overtly. They are more in control and show considerable initiative in their responsivity. Children in middlechildhood seem less able to ignore the baby -- the baby is controlling the situation.

As predicted, few sex differences emerge in baby interest until adolescence. Babies serve as potent elicitors for adolescent girls. Not only do they show more interest in babies, but they are less able to tune out the sounds and actions of unfamiliar infants. Boys' responsiveness, on the other hand, is less contingent upon a baby's behavior -- in accord with their masculine stereotype, they determine when and if they interact with the infant. The greater interest of adolescent girls to live babies even extends to pictures of babies. They acknowledge this heightened interest and will publicly declare their enjoyment of caregiving and their comfort with infants.

Although the behavioral and perceptual measures used in this study tap independent aspects of baby responsivity the main result is consistently demonstrated. Clearly, the Waiting Room situation also measures the inhibiting effect of the experimental setting, especially the presence of an adult in the room. Similarly, the perceptual measure involves artistic judgments in addition to the differential impact of 2-dimensional representations on children at different cognitive stages. Nevertheless, the perceptual measures confirm the behavioral findings despite the fact that both have different external correlates and do not correlate with each other. Since the inhibitory influence of the adult is less likely to effect low-keyed, non-intrusive reactions to the baby, it is noteworthy that the findings are true for covert measures of interest (such as ignoring the baby, time spent looking at the baby and the baby pictures, etc.) as well as the more overt measures and public statements of interest.

Why should girls show this heightened interest in babies during adolescence? With the attainment of formal operations, the adolescent is able to think about self and hypothesize future possibilities that he/she could enact. A new awareness and questioning of ones identity typically occurs. Concomitant sexual maturation makes gender a particularly important self-descriptive variable for the adolescent. Women's liberation notwithstanding, biological options do constrain future role options of the developing female. For the adolescent girl trying on new roles, at least one pathway is virtually fixed; few females at any age unequivocally decide against marriage and parenthood. And although adolescent boys accept the role of fatherhood as probable in the future, fatherhood in our society is a less time-consuming role, and therefore interferes less with the other options available to males. It appears then that by adolescence, girls have adopted sex-stereotypic values such as baby interest into their behavioral repertoire.

Thus, sex-role stereotypes appear to be especially relevant to the adolescent who is in the midst of developing heterosexual relationships which demand reciprocal roles. Are the sex differences in baby responsiveness these stereotypes describe age-bound and ephemeral or do they herald the beginning of life long sex-defined differentiation? Previous research from our laboratory suggests that clinging to this stereotypic behavior is a temporary rather than a permanent phenomenon (Feldman & Nash, 1976). By adulthood, when males and females are more secure in their respective roles, there is less of a need to resort to the security of stereotypic prescriptions. Being interested in babies is no longer differentiated by sex among cohabiting or married young adults who are non-parents, since it is not relevant to their life circumstances (as it will be in parenthood). Thus, the sex difference in baby responsiveness found among adolescents is most likely a

"crutch," a retreat to old familiar stereotypes during a period of unclear self-definition.

Sex differences, no matter what their origin, serve important social functions at the time they are manifest (Emmerich, 1973). However, somewhat different patterns of sex differences occur during each period of the life cycle. Within-period appraisals of behavioral sex differences and their determinants help clarify the nature of the developmental tasks, while between-period comparisons provide insight into the sequence of human development.

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Table 1

Reliability of Observations, Using

Intraclass Correlations based on 36 Ss, using 4 observers.

Baby & other Elicitors		Behavior directed to Baby		Other Behavior	
Baby elicits	0.95	Looks	0.94	Talks about other	0.91
Other elicitors	0.95	Smiles	0.82	Looks at Mother	0.89
Baby initates proximity	0.96	Gesture, funny/ face	0.95	Looks at Objects	0.95
Mother responds to baby	0.98	Talks to baby	0.94	Talks to Mother	0.96
		Talks about baby	0.91		
		Gives/shows	0.95		
		Initiates proximity	0.99		
		Touches baby	0.99		

Table 2

Spearman rank correlation co-efficients for middlechildhood children, showing the inter-relationship between dependent measures, separately for each sex.

(Girls N=16, above diagonal, Boys N=16 below diagonal)

	Baby Responsiveness	Proximal Bids	Distal Bids	Ignores Baby	Picture Preference	Picture Duration
Baby Responsiveness		.36	.71**	-.03	.26	-.01
Proximal Bids	.44*		.03	.03	.10	-.43*
Distal Bids	.74**	-.06		-.43+	.22	.002
Ignores Baby	-.47*	.16	-.84**		-.07	.28
Picture Preference	-.05	.41+	-.21	.17		.44*
Picture Duration	.43+	.02	.31	-.17	.18	

+ $p < .10$

* $p < .05$

** $p < .01$

Table 3

Spearman rank correlation co-efficients for adolescents, showing the inter-relationship between dependent measures, separately for each sex.

(Girls N=16, above diagonal; Boys N=16 below diagonal)

	Baby Responsiveness	Proximal Bids	Distal Bids	Ignores Baby	Picture Preference	Picture Duration
Baby Responsiveness		.65**	.87**	-.73**	-.05	.02
Proximal Bids	.67**		.41+	-.35	.13	.12
Distal Bids	.91**	.61**		-.90**	-.04	.10
Ignores Baby	-.32	-.18	-.41		.17	-.20
Picture Preference	-.22	-.16	-.19	.07		-.01
Picture Duration	-.46*	-.27	-.33	.26	.03	

+ $p < .10$

* $p < .05$

** $p < .01$

Table 4

Means, medians and inter-quartile ranges (IQR) for measures of baby interest; separately by sex and age

	Middlechildhood		Adolescents	
Baby Responsiveness	Girls	Boys	Girls	Boys
Trimmed Mean*	48.9	47.0	48.1	45.7
Median	48.6	46.9	48.6	45.2
IQR	45.8-54.1	42.2-50.9	45.3-52.2	43.0-50.5
Proximal Bids				
Trimmed Mean	0	0	0	.25
Median	0	0	0	0
IQR	0-0	0-0	0-0.5	0-2.0
Distal Bids				
Trimmed Mean	32.5	25.5	26	16.3
Median	31.5	19.0	26.0	15.5
IQR	24.5-39	6.5-42	14.5-38.5	8.5-28.5
Ignores Baby				
Trimmed Mean	10.1	19	19.5	24.8
Median	9	13.5	18.5	24.5
IQR	6.5-17	8-45.5	6.5-35.5	16-47
Picture Preference				
Trimmed Mean	0.4	0	0.9	0.1
Median	0	0	1	0
IQR	0-1	0-0.5	0-1	0-1
Picture Duration				
Trimmed Mean	12.5	13.6	13.5	12.5
Median	12.5	13	13	12.5
IQR	11-14	12.5-16	13-15	12-13.5

* Trimmed mean = mean of the values in the interquartile range, and is recommended by Mostellar & Rourke, 1973 when data are non-normal.

Table 5

Results of Mann-Whitney tests of sex differences in interest in babies, within and across age groups

	Combined Ages N=64	Middle-Childhood N=32	Adolescents N=32
Waiting Room			
Baby responsiveness	$z = 1.64^{*}$	---	$U = 88^{+}$
Proximal Bids	---	---	---
Distal Bids	$z = 2.24^{**}$	---	$U = 89^{+}$
Ignores baby	$z = 1.77^{*}$	$U = 86^{+}$	---
Perceptual Measures			
Picture preference	$z = 2.42^{**}$	---	$U = 72.5^{*}$
Picture duration	---	---	$U = 85.5^{+}$
Questionnaire Items			
"enjoy caring for babies"	$z = 3.33^{**}$	---	$U = 69^{*}$
"comfortable with responsibility for babies"	$z = 3.64^{**}$	---	$U = 59.5^{*}$

$^{+}\ p < .10$
$^{*}\ p < .05$
$^{**}\ p < .01$

Table 6

Spearman-Rank Correlation of Baby Interest measures with sex-role and self report measures: reported separately by sex and age.

	Sex Role				Self Report			
	Masculinity		Femininity		"Comfortable With ... . Infants"		"Enjoy Taking Care of Infants"	
	8-9 yrs.	14-15 yrs.	8-9 yrs.	14-15 yrs	8-9 yrs	14-15 yrs.	8-9 yrs.	14-15 yrs.
GIRLS								
Baby Responsiveness	-.50*	--	--	--	--	--	--	--
Distal Bids	--	--	--	--	--	--	--	--
Ignores Baby	--	--	--	--	--	--	--	-.45*
Picture Duration	--	--	.62*	--	.70*	--	.48*	--
BOYS								
Baby Responsiveness	--	-.43*	--	.43*	--	--	--	--
Distal Bids	--	-.35+	.48*	.38+	--	--	--	--
Ignores Baby	--	--	--	-.36+	--	.40+	--	--
Picture Duration	--	--	-.47*	--	--	.37+	.74**	.43*

+p <.10
*p <.05
**p <.01