

Sex Differences: A Study of the Eye of the Beholder

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CONDY, JOHN, and CONDRY, SANDRA. *Sex Differences: A Study of the Eye of the Beholder*. CHILD DEVELOPMENT, 1976, 47, 812-819. In an attempt to assess the effects of labeling on socially mediated sex differences in infancy, 204 male and female subjects rated the same infant's emotional responses to 4 different arousing stimuli: half of the subjects were told they were observing a "boy" and the other half, a "girl." The same infant in a particular situation was seen as displaying different emotions and significantly different levels of emotional arousal depending on the sex attributed to the infant, the sex of the rater, and the rater's experience with young children. The results suggest a healthy caution be exercised in interpreting studies of sex differences obtained by observers who know the sex of the child being rated.

The fact that we often see that which we expect to see is sufficiently well known and accepted to be accorded the status of a cliché. But follow the logic one step further: we usually act on what we think we see, and when those actions are directed toward another person, they affect the other person in a variety of ways. When our actions are directed toward children, the picture is complicated even more. Children often search for an answer to how they should behave by watching the ways adults act toward them. Thus the actions of adults, directed toward children, acquire a reality-defining quality. A parent who expects his child to dislike mushrooms can act toward the child in such a way as to bring about the very dislike he expects. A mother who expects her daughter to fear mice can interpret the child's first startled reaction to mice as fear and act accordingly, thus defining the emotion and the subsequent appropriate action for the child (Schachter & Singer 1962). If the child responds to this definition and it has social support, this socially transmitted characteristic may become part of that child's common behavior repertoire. One area where a "label" could have significant effects is that of sex differences (Maccoby & Jacklin 1974), and so we have chosen to apply our analysis to this topic. Could adults be encouraging sex differences in just such a manner?

Sex differences among infants and young children are found by many researchers. We know

that girl infants show a fear of strangers at a younger age than do boy infants (Robson, Pederson, & Moss 1969) and at 2 years and later girls show more intense fear than do boys to fear-provoking stimuli (Jersild & Holmes 1935). Toddler girls display a higher language competence than do toddler boys (Clarke-Stewart 1973); the same is true at 2½ years of age (Bell, Weller, & Waldrop 1971). One-year-old boys play more vigorously than do girls (Goldberg & Lewis 1969) and from 2 to 4 years they engage in more rough and tumble play (Smith & Connolly 1972). Boys at 2 years of age and older score higher than girls in physical aggression (McIntyre 1972) and are also more passively nonconforming (Pederson & Bell 1970).

A most common question in the study of sex differences is how these differences arise. Maccoby and Jacklin (1974) cite three factors that affect the development of sex differences. These are: (1) genetic factors; (2) "shaping" of boylike and girl-like behaviors by parents and other socializing agents; and (3) the child's spontaneous learning of behavior appropriate for his sex through imitation. The study reported here bears on the second of these factors.

Until it is satisfactorily answered, a question of equal importance is how many of the sex differences reported in the literature are actually present in little children. The results of the studies cited above are all based on observations by re-

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searchers or teachers. In most observational studies where sex differences are found (either incidentally or centrally), the sex of the child is known to the observer. The children are personally known by the rater or have sex-appropriate names, clothes, and/or hair styles. How important is it that the rater knows the sex of the child being rated? To determine this we require a situation in which raters see identical children performing identical behaviors in identical situations, the only difference being that one child is a boy and one is a girl. Happily, with videotape technology, we need only one child in a situation and we can tell some raters the child is a boy and other raters that she's a girl. With this setup, we can answer the question: Do observers see differences in a child's behavior as a function of the sex-type label alone? If they do, it would be most useful to know if *what* a rater sees can be predicted from some of his own characteristics. Two likely and easily measured characteristics are the rater's sex and experience with children.

The paradigm for this research is suggested in two earlier studies by Meyer and Sobieszek (1972) and by Rothbart and Maccoby (1966). In both cases, adults were asked to respond to a stimulus which was cross-labeled as to sex of the child. Rothbart and Maccoby had parents listen to and rate statements made by a 4-year-old child. Fathers allowed both more aggression and dependency from a girl than from a boy, and the reverse was found of mothers. Meyer and Sobieszek showed videotapes (cross-labeled) to adults who rated attributes of 17-month-old children. Overall, subjects showed no tendency to attribute more masculine qualities to a child described as male, or vice versa, although subjects did show a tendency to describe a child of their own sex as having more qualities than a child of the opposite sex.

Method

Subjects.—A total of 204 subjects, 45 males and 159 females, participated in the experiment. The subjects, who ranged in age from 18 to 25 (most were white and all were middle-class), were college students attending one of two universities in upstate New York. All of the subjects were tested in a classroom situation. In all cases, both male and female experimenters were present, although the instructions were always read by the male experimenter.

Procedure.—An ongoing project to study emotional development in infancy provided a convenient source of experimental materials. In these studies (Ricciuti & Poresky 1972), infants of different ages are videotaped responding to several

emotionally arousing stimuli. In the tape in this study, the 9-month-old infant is seated in an infant seat facing a one-way mirror (with the video camera mounted behind the mirror). The infant is shown the stimuli in sequence, given approximately the same amount of time of exposure (about 60 sec) to each stimulus. Four stimuli are shown: a teddy bear, a jack-in-the-box, a doll, and a buzzer. The entire tape runs about 10 min.

Subjects were recruited for participation in the experiment in classes, and they were tested in classrooms with 60–70 subjects, both male and female, for each of the three testing sessions. Once seated in the classroom, the experimental materials were distributed (a packet of instructions, rating scales, and demographic information scales) and subjects were asked not to turn the pages until told to do so. Subjects were told they would be rating the emotional behavior of an infant as part of an ongoing project to study emotional development in the first 2 years of life.

The complete questionnaire contained a self-rating scale for "experience with infants," a scale for recording the emotional reaction of the infant to the various situations or stimuli, a semantic differential scale for describing the infant in an overall way after the emotional labeling data were collected, and a follow-up questionnaire to complete the ruse that we were concerned mainly with the use of the rating scale.

Experience with infants.—The experience with infants scale asked subjects to describe their familiarity with infants and children up to 3 years of age. Subjects were asked to describe their experience in the last 5 years only. The 10-point scale ran from "1: No contact with young children" and "2: Have seldom been with young children" to "9: For at least a year had extensive contact with a young child (e.g., baby brother or sister) and was frequently responsible for his/her care" and "10: Have had extensive contact with a young child and extensive responsibility for his/her care (e.g., raising own child, working in a day care center)."

Emotion rating scale.—Once the subjects completed the experience scale, the instructions as to the use of the rating scale were given:

On a videotape you are about to see, you will observe a child being presented with 4 different stimuli. Each stimulus is presented to the child 5 times (for example, the teddy bear will be pushed toward the child and pulled back 5 times). The child will respond each time, and your task is to give an overall intensity rating of these 5 responses along 3 separate emotional dimensions. These are the emotions of pleasure, anger and fear.

It is possible that you will see the child display only

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one emotion during the 5 presentations of the same stimulus. If so, rate the intensity of that emotion and give the other two emotions a zero rating. But it is also likely that you see the child show mainly one emotion with a lesser amount of one or both of the other emotions. If so, rate the intensity of each emotion shown and give a zero to any emotion you judge is not present.

The 10-point emotion rating scale contained places for rating both the type and intensity of the observed emotion. A zero rating indicated the absence of that particular emotion, a 5 meant "moderately strong," and a 10-point rating indicated the strongest possible *intensity* of that particular emotion. The videotape was stopped after each "stimulus situation," that is, at the end of a sequence involving a single stimulus. Each stimulus was presented five times, except for the buzzer which was presented only three times due to the degree of distress displayed by the infant.

Manipulation of attributed sex.—On the same page as the infant rating scale was a space for "infant name, age, and sex." This blank was penned in for all subjects. Half of the protocols gave the name as "David" and the sex as "male," the other half had the name "Dana" and the sex "female" written in. These questionnaires were distributed at random to the subjects seated around the room, so some subjects who were "told" they were about to watch "David" were sitting next to other subjects who were "told" they were about to watch "Dana." The age was given as 9 months on all protocols.

Once the response scale was explained and there were no questions as to its use, the experimenter continued: "The name and age of the infant you will be watching are already written in the upper right hand corner of the page. You will have to make note of them for later reference." The semantic differential scale on the next page had a blank for "Infant name, age, sex" which was *not* filled in, and the subjects were asked to fill it in "at this time." The purpose of this roundabout procedure was, of course, to make the subjects' aware of the attributed sex of the infant without saying the name or sex out loud.

As soon as the instructions were complete for the emotion rating scale and the subjects had completed writing the name and sex of the infant they were about to watch on the next page, the videotape was shown. All stimuli were presented in the same order: teddy bear, jack-in-the-box, doll, and buzzer. The tape was stopped at the end of each stimulus to allow time for the subjects to make their ratings. In general, the infant on the videotape responded positively (smiled, laughed, reached out) to the teddy bear and doll, and nega-

tively (turned away, stared, cried) to the jack-in-the-box and buzzer.

Semantic differential scale.—When the videotape rating was completed, subjects were asked to describe the infant they had just seen using a semantic differential scale (Osgood, Suci, & Tannenbaum 1957) of bipolar items made of three items with high loadings on each of three subscales. These scales and the items were: *activity*: quiet-loud, moving-still, fast-slow; *potency*: aggressive-passive, little-big, strong-weak; and *evaluation*: good-bad, ugly-pretty, friendly-unfriendly.

Once the semantic differential scale was complete, the subjects completed a short scale ostensibly designed to measure the quality of the scale they had just used. When this last measure was complete the subjects were told the purpose of the experiment including the deception about the sex of the infant they were observing. The reasons for the deception were discussed and the subjects were thanked and dismissed.

Results

The basic question, of course, is whether the subjects who think they are watching a girl rate the infant differently than subjects who think they are watching a boy and, if so, whether these differences are related to characteristics of the subject (sex, experience with infants) and the characteristics of the stimulus situation and emotion judged. The variable of experience with infants was dichotomized by dividing the experience with infants scale described earlier at the median for each sex of subject. Table 1 presents the mean intensity ratings for every emotion in all situations by all characteristics of the subjects. An analysis of variance for unequal cell frequencies (Winer 1962, p. 224) was done on these data.

The only main effects to reach significance are those due to emotion, $F(3,2352) = 9.26, p < .001$, and situation, $F(2,2352) = 88.86, p < .001$ and these are of little consequence with respect to our original interests. They suggest only that there are significant differences to be found in the different emotions observed and that the emotional responses to the various situations were indeed different. It is the interactions that are of interest to the hypotheses under examination.

A variety of lower-order interactions are statistically significant and point to the fact that sex labeling significantly affects the ratings of the infant. These lower-order interactions are reflective of even stronger high-order interactions, so let us turn to them. One of the strongest interactions

TABLE 1

MEAN EMOTIONAL RESPONSIVENESS JUDGED FOR THE ATTRIBUTED "BOY" AND THE ATTRIBUTED "GIRL" BY SEX OF SUBJECT (OBSERVER), EXPERIENCE WITH INFANTS, STIMULUS SITUATION, AND EMOTION

STIMULUS SITUATION	"BOY"						"GIRL"									
	High Exp.			Low Exp.			High Exp.			Low Exp.						
	Pleasure	Anger	Fear	M	Pleasure	Anger	Fear	M	Pleasure	Anger	Fear	M	Pleasure	Anger	Fear	M
	Sex of S: Male															
Teddy bear	7.75	1.00	0.12	2.95	7.58	1.21	0.42	3.05	7.50	0.00	0.00	2.50	6.94	0.75	0.50	2.73
Jack-in-the-box	1.50	4.88	3.88	3.42	1.42	3.37	2.37	2.45	1.50	1.50	0.00	1.00	1.38	2.88	4.00	2.75
Doll	4.26	2.00	3.13	3.13	4.21	0.26	2.00	2.16	3.50	1.00	1.50	2.00	2.88	1.63	2.19	2.23
Buzzer	0.50	2.25	7.63	4.96	0.05	2.27	6.84	3.05	0.50	1.50	3.50	1.83	0.44	2.56	4.63	2.54
M	4.63	2.53	3.64	3.61	3.31	1.77	2.90	2.66	3.25	1.00	1.25	1.83	2.91	1.95	2.83	2.56
	Sex of S: Female															
Teddy bear	7.48	0.75	0.35	2.86	7.71	0.60	0.29	2.86	7.40	0.93	0.73	3.02	7.12	0.51	0.55	2.73
Jack-in-the-box	1.78	3.03	2.03	2.26	1.18	2.42	3.66	2.42	1.87	3.43	3.40	2.90	1.24	2.33	3.08	2.22
Doll	3.63	0.98	2.18	2.23	4.42	1.03	2.03	2.49	3.13	1.97	2.37	2.49	2.88	1.20	2.12	2.06
Buzzer	0.15	2.03	4.68	2.28	0.45	2.97	5.90	3.11	0.30	2.73	5.73	2.92	0.47	1.98	6.06	2.84
M	3.26	1.65	2.31	2.41	3.44	1.75	2.97	2.72	3.18	2.26	3.06	2.85	2.95	1.50	2.95	2.46

Note.—Potential range of response: 0-10 for each cell.

found in the study is of the relationship between sex of the subject, attributed sex of the infant, and experience with infants, $F(1,2352) = 11.48$; $p < .001$. The means for this interaction are presented in table 2. As can be seen, males with high experience with infants see more of a difference due to the sex label than males with little experience with infants. If anything, females show the opposite effect. Females see about the same difference between boys and girls, but the direction of the effect is the opposite of that for males. That is, females with high experience with infants give a higher rating (e.g., see a greater intensity of emotional response) in girls than in boys, and the opposite is true of the females with little experience with infants. These findings suggest that the effect of having experience with children may well be different for men than for women.

Attributed sex also interacted with emotion and situation, $F(6,2352) = 2.31$, $p < .03$. This interaction suggests that when the infant is labeled as a boy it is seen as showing more pleasure, across all situations, than when the infant is labeled as a girl, although, as the data in table 2 indicated, this tendency is more pronounced for male subjects than for female subjects. In fact, it may be the reverse for women who see slightly more "intensity" of emotion in the attributed girl than do males. In general, there is a good deal of variation by situation. Although we have no a priori measure, subjectively at least, it appears to us that the more "ambiguous" the situation, the more of a difference subjects report seeing between the sexes. Thus, for example, the teddy bear elicits a good deal of positive emotion and little else. The situation is relatively unambiguous and few differences between the attributed sexes are recorded. The same thing appears to be true of the buzzer. This stimulus is obviously noxious (so much so that the stimulus situation is terminated after only three as opposed to the usual five presentations), and the child cries intensely throughout. The ratings reflect this lack of ambiguity, with most subjects rating this display as an intense fear response

with some small amount of anger thrown in. No differences appear between the attributed boy and the attributed girl.

In contrast, the infant's response to situation 2, the jack-in-the-box, is the most ambiguous of all. At first the infant stares at the box and shows a slight startled reaction when it is first opened. Upon successive presentations the infant becomes more and more agitated and after the third presentation the infant cries when the box is pushed forward (even before it is opened) and screams when the jack-in-the-box jumps up. The means for this rating are given in table 3, excluding the rating for pleasure which is virtually the same for the "boy" and the "girl" (1.48 vs. 1.46). The striking differences manifested in this particular situation, $F(6,2352) = 2.46$, $p < .02$, suggest that *given* a certain degree of ambiguity, if you see a boy crying you may well be more willing to attribute this emotion to "anger"—a more "masculine" response and if you think you are watching a girl, to "fear"—a more "feminine" response.

Semantic differential.—There were no differences due to the sex of the observer in the semantic differential scales, and so the responses of all observers were combined and analyzed by the three subscales of the semantic differential. The results of this analysis are given in table 4.

These data show that the infant as a boy was seen as being slightly, but significantly, more "active" and "potent" than the infant as a girl, although the "two" children were seen as equally "good."

Discussion

The findings of this study bear on the social-mediational approach to the development of sex differences. They do not suggest that this is the only way that sex differences come about, but they do offer a way of assessing the parameters for this manner of producing sex differences. Our findings suggest that, when people observe a child behav-

TABLE 2
MEANS ASSOCIATED WITH THE TRIPLE INTERACTION
OF SEX (OF SUBJECT) \times ATTRIBUTED SEX
(OF INFANT) \times EXPERIENCE WITH INFANTS,
SUMMED OVER ALL OTHER CATEGORIES

ATTRIBUTED SEX	SEX OF S: MALE		SEX OF S: FEMALE	
	High Exp.	Low Exp.	High Exp.	Low Exp.
"Boy"	3.61	2.66	2.41	2.72
"Girl"	1.83	2.56	2.83	2.46

TABLE 3
MEANS ASSOCIATED WITH THE ANGER-FEAR
RESPONSE TO SITUATION 2
(JACK-IN-THE-BOX),
ARRANGED BY
ATTRIBUTED SEX

EMOTION	ATTRIBUTED SEX	
	"Boy"	"Girl"
Anger	3.01	2.74
Fear	2.82	3.26

ing where it is possible to control all aspects of the situation and to vary only the *label* of "boy" or "girl," this manipulation alone is enough to lead to observed differences in perceived emotional responsiveness, and that these differences vary with respect to characteristics of the observer as well as the situation and emotion being judged. These findings suggest that caution be taken in interpreting observational studies where the sex of the subject is known by the observer and where actions to be observed bear upon some sex stereotypical behavior. It would be interesting to know, for example, in light of these findings, if differences in observed aggressiveness in male and female nursery school children, reported in an abundance of studies (Bandura, Ross, & Ross 1963; Durrett 1959; Hattwick 1937; Oetzel 1966), would hold up when the subjects being observed were cross-labeled as to their sex. Given the current trend of long hair on boys it would undoubtedly be possible to videotape "androgynous" children playing in a nursery school and have observers rate the tapes.

In addition to suggesting a method for studying the effects of attributions regarding sex differences, the present study also suggests several areas to explore in the hopes of finding characteristics of the observers that lead to differences in

perception. These findings suggest only directions in which to look for differences. Thus males appear to observe larger differences between attributed boys and girls than do females. This could mean that males are more inclined to perceive differences (where there are none) and possibly to act upon these perceptions. This finding gains in importance because much of the work in the area of parental treatment effects on children is done by observing mother-child interactions (Nash 1965; Bronfenbrenner, Note 1). Our findings do not imply that this is wrong, but in terms of potential socially mediated treatment differences our findings do suggest that it may be the father who expects boys and girls to be particularly different and, if he believes that, perhaps treats them differently as well.

Apparently having experience with infants makes some difference in what one sees, also, in line with the findings of Meyer and Sobieszek (1972). Indeed, experience with infants also interacts with actual sex of the observer to produce the interesting pattern of results described in table 2. We found that high-experienced males saw a bigger difference between the "boy" and the "girl" than did low-experienced males, while no such effect of experience was evident for females. In addition, the direction of the effect was different for males and females. All of this suggest that experience with children may be represented differently for males and females, and it may have different effects for each. Once again, the direction and substance of these effects must await further elaboration, but our findings suggest that this is an important area for exploration.

The kinds of differences seen between the attributed boy and the attributed girl are a function not only of the beholder but also of the "stimulus situation" beheld. Across all situations the attributed boy was seen as displaying more pleasure and less fear than the attributed girl. When each situation was viewed alone, by far the most interesting interaction is that reported in table 3. In this particular segment the emotional response was somewhat ambiguous, and we found that the "negative" emotion displayed was labeled "anger" if the infant was thought to be a boy, and "fear" if the infant was thought to be a girl. Since the subjects were observing the same emotional response, this finding serves well to illustrate several important components of the social mediational approach. It is not possible to attribute these differences to "eliciting" by the child. The direction of the effect suggests what might happen next, to wit: If you think a child is *angry* do you treat "him" differently than if you think "she" is *afraid*? Our study was not designed to reveal treatment differ-

TABLE 4
MEANS AND SIGNIFICANCE VALUES FOR *t* TEST
FOR ANALYSIS OF SEMANTIC DIFFERENTIAL
RESULTS ARRANGED BY SUBSCALE

SEMANTIC DIFFERENTIAL SUBSCALE	ATTRIBUTED SEX		<i>t</i>	<i>p</i>
	"Boy"	"Girl"		
Activity	11.11	10.53	2.40	.05
Potency	10.31	9.77	2.29	.05
Evaluation	11.76	11.94	0.55	N.S.

ences but it seems reasonable to assume that a child who is thought to be afraid is held and cuddled more than a child who is thought to be angry. Regardless of the direction of the difference, if future research shows treatment differences, these could highlight an important causal sequence in the development of sex differences.

A final point made by this interaction of anger and fear with attributed sex is that social influences are most likely to occur in situations which are somewhat ambiguous. This is particularly clear in the labeling of emotions (Schachter 1964), the behavior under study in this experiment. If a child falls and scrapes a knee, or laughs joyfully at a birthday present, the "situational" attributions are clear and few effects due to the sex label would be expected—or, as our data indicate, are likely to be found. On the other hand, a large number of situations encountered while children are growing up *are* ambiguous, and so lend themselves to the kinds of interpretation revealed in this study. In short, stereotypes take over when other explanations are less viable. The directions of those stereotypes have been studied by others (cf. Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz 1970) and are reflected in our study in the anger-fear interaction described above and in the results of the semantic differential analysis. The semantic differential data are interesting and they raise some important questions. Is it the case that the sex label is seldom used "evaluatively" although it does have activity and potency meanings? Or, alternatively, is this result simply the outcome of the particular situations sampled in this research? Since the situations sampled in this study were reasonably broad and the emotional attributions quite variable, we are inclined to believe that the sex label is seldom used evaluatively, at least by the population studied.

All our results lend credence to the possibility suggested by the social mediational approach described in the beginning of this paper. They suggest that when all else is held constant, people still see differences due to the label of "boy" and/or "girl," and that these differences tend to be most obvious in ambiguous situations and to follow the lines of socially accepted sex role stereotypes. It would appear, in short, that a lot more than "beauty" resides in the eye of the beholder.

Reference Note

1. Bronfenbrenner, U. An emerging theoretical perspective for research in human development. Speech presented at president's symposium at annual meeting of the Society for Research in Child Development, Philadelphia, March 1973.

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