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ABSTRACT

This paper reports an 18-month investigation of the differential effects of social context (i.e., characteristics of people in the child's immediate environment) on infants' positive social behavior. The social behaviors of 14 children from 1 to 2-1/2 years of age were observed at home and in a laboratory playroom. The social context was varied along three broad categories of stranger characteristics: familiarity to the child, personal qualities of the individual, and type of behavior performed by the stranger. Data were analyzed by sex of infant, by the degree to which infants demonstrated social competence with their mothers, and by infants' familiarity with the observed situation, as well as by characteristics of the strangers. Results were interpreted to illustrate the need for experimenters to take into account characteristics and behaviors of testers and observers in assessing infant social development. In addition, it was suggested that by the time children are 14 months old, and increasingly over the next year and a half, they spontaneously initiate positive social behavior and are appropriately responsive to adults whom they have never met before. (BRT)

SOCIABILITY AND SOCIAL SENSITIVITY: CHARACTERISTICS OF THE STRANGER

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The Contexts of Competence.

The previous papers in this symposium, Contexts of Competence, have illustrated how children's play, language, and intellectual competence are influenced by characteristics of the immediate situation. The subject of the present paper is another kind of behavior that is affected by context, and that is the child's social behavior. Unfortunately, we have no clear standards for social competence as we do for language and intellectual development -- perhaps because research on young children's social behavior has so often focussed only on attachment to the mother, stranger anxiety, or overall social responsiveness. An aspect of children's social behavior that surely reflects social competence, yet one that has been relatively neglected by researchers, is the child's positive social behavior -- smiling, approaching, vocalizing, behaving responsively, and playing cooperatively -- with mother and other people, including father, siblings, other children, and adult strangers. In the past, some studies have investigated how maternal characteristics are related to the child's attachment to mother or to general social responsiveness. Others have probed aspects of the situation that affect stranger anxiety. But few, to date, have investigated how the social context, especially characterisitics of people in the immediate situation, differentially affects children's positive social behavior, or how such competent social behavior is related to the child's previous experience. It was to address these latter issues the present report was written.

The data are drawn from an intensive longitudinal study of the social development of 14 children from 1 to 2½ years of age. The families studied were all white two-parent families, with 1 or 2 children, and represented a range of social-class backgrounds. They were visited repeatedly at home and occasionally in the laboratory playroom, over the 18-month investigation. The data for this particular report come from 5 visits which included semi-structured procedures for assessing children's reactions to adult strangers. The procedures were

basically the same for all 5 visits. Sometime after the observer arrived at the home or after mother and child were settled in the laboratory playroom, usually while the child was playing with a toy, a stranger entered the room. The mother had been instructed to stay in the room and play a receptive but non-initiatory role toward the child and the stranger. Usually, the stranger engaged first in a "biased interaction" with mother or child; that is, she behaved with them in a certain specified way for a short period of time. She then went through a standardized procedure, the "approach sequence", which consisted of the following activities: she sat down at a moderate distance (8 - 12 feet) from the child and ignored him/her for 1 minute, then she looked at him/her for 1 minute, smiled and gave a friendly greeting (½ minute), played for 1 minute with a toy that the child liked, talked to the child in a friendly way, including in her conversation a number of specific requests such as "come over here" (if not already there), "come and play with me", "look at the jack-in-the-box", "put the book on the table", "give me the toy", etc., then she put her arm around the child and played a physical game (1 minute), waited quietly and receptively for 1 minute, and, finally, left the room. One way in which this approach sequence procedure differs from most previous attempts to assess children's reactions to strangers is in its emphasis on the child's approaching the stranger rather than the stranger's approaching the child.

The observer recorded the child's social behavior during both the biased interaction and the approach sequence, on what was essentially a 10-second-interval checklist for the following behaviors to stranger and mother: (1) looks at, (2) vocalizes to, (3) expresses positive affect to (smiles, laughs, touches affectionately), (4) expresses negative affect to (frets, cries, avoids, frowns, hits), (5) plays socially with a toy with, (6) goes to, (7) has physical contact with (touches, holds, clings to), and (8) imitiates. Behaviors were also qualified as "responsive" when they were clearly in response to the stranger's behavior

(e.g. compliance with a request). In the laboratory, the child's proximity to stranger and mother was recorded according to his/her location in squares marked on the floor.

The present paper discusses the effects on these children's social behaviors of three broad categories of stranger characteristic: (1) familiarity to the child, (2) personal qualities of the individual, and (3) type of behavior performed by the stranger. The most blatant variation in the first of these categories was a comparison of the child's social behavior toward mother and toward a complete stranger (table 1). In the laboratory, when they were 2½ years old, children were observed with mother and a stranger in identical, concurrent situations -- that is, while mother and stranger were in the same room, doing the same things (playing, talking, making strange noises, etc.), at the same time. The differences in children's behavior toward the very familiar mother and the totally unfamiliar stranger were significant and dramatic. Children stayed close to their mothers (4 times as many minutes were spent within 2 feet of mother as close to stranger) and were more often in physical contact with mother (50 times as much -- they almost never touched the stranger in this situation). They also talked to the mother twice as much as the stranger. However, they looked at the stranger more, imitated and were responsive to her more often, played with her more, and showed more positive affect to her (3 times as much). These differences were highly significant, and support a view of the mother as a (physically) secure base and the stranger as an interesting and enjoyable new playmate.

Another attempt to probe the dimension of familiarity investigated a smaller difference, that between a somewhat familiar observer, who had visited the child several times before, and a completely novel stranger. The first examination of this variable occurred, at home, when the children were 14 months old (table 2). This was the fourth time the children had seen the same home

observer, but interaction between them up to that time had been minimal. The preceding visit had been about a month earlier. A research assistant who was like the observer in sex, age, and race, but who the child had never seen before, came to the home with the observer. She immediately went through the approach sequence described, followed by the observer's performance of an identical sequence. In comparing the child's reactions to stranger and observer, there was no difference in the amount of interest shown to each (looking, vocalizing, touching approaching) or in behavior that might be classified as "anxious" or "fearful" (looking away from, fretting, crying, avoiding) -- in fact, these latter behaviors occurred relatively infrequently, and for only about half the sample. Nor was there a difference in children's behavior toward the mother during their encounter with stranger or observer. There was, however, a significant difference in the positive emotion expressed toward the two: the observer was smiled at, laughed with, and apparently enjoyed more than was the stranger. Moreover, when children's social behavior was divided into "responsive" and "self-initiated", these categories, too, differentiated between stranger and observer: children were more responsive to the observer, initiated more to the stranger.

A parallel examination of children's reactions to strangers and to a familiar observer was conducted, again in the home, at 30 months (table 2). By this time, the child had seen the observer at least 12 times, and had interacted with her on several previous occasions. At this visit there were two strangers in addition to the observer, who were all, once again, somewhat similar in appearance. The results were almost identical to those observed 16 months earlier. No difference was observed in looking or vocalizing to strangers or observer, in approaching or touching, in any expression of negative emotion, nor in any social behavior toward the mother. However, as before, the child showed

much more positive emotion in interaction with the observer than with either stranger, was more responsive to the observer, and engaged more in cooperative social play with her. (Although in both these probes interaction with the stranger(s) preceded that with the observer, thus strengthening the observer's familiarity, and although the difference in positive emotion was especially marked between the observer and the first stranger, it does not seem possible that the differences are merely the result of order or sequence of appearance, as subsequent analysis of sequence demonstrates.)

It seems that even at this very early age children are influenced by their previous contact with an adult. They react differently to total strangers and to adults with whom they have had even limited contact before, particularly in terms of positive affect and responsiveness. In comparison with the mother, a stranger was responded to with greater joy, playfulness, and responsiveness -- i.e. was perceived as an enjoyable new playmate -- but in comparison between strangers and a more familiar observer, it was the observer who was the more enjoyable playmate.

One of the other issues the present research attempted to probe, as well as overall differences in social behavior elicited by different strangers, was whether all children are affected equally or identically by the characteristics of the people they meet, and if there are differences among children in sensitivity to stranger characteristics, how those differences come about. A possible source of variation that might discriminate among children -- and one of current interest -- is that of the child's sex. There has been some suggestion in the literature that girls are more sociable than boys. For this reason, all analyses of stranger effects also included the sex of the child in 2-way ANOVAs. To digress for a moment from our discussion of the effects of stranger familiarity, let me describe the main effects of the child's sex observed in the present study. At

14 months and at 30 months, there were no consistent, significant differences between boys and girls in overall frequency of any of the various kinds of social behavior measured. Only at 17-18 months were sex differences noted. At that age, boys initiated more social interaction with the stranger (especially vocal and physical) and girls spent more time in physical contact with their mothers. The lack of overall consistent and significant sex differences in sociability would fit with the conclusion of Maccoby and Jacklin's (1974) recent comprehensive review of the literature on sex differences. Their review, however, did not present detailed developmental data for these ages. It may be that there is a period around 17-18 months when boys are more actively outgoing with unfamiliar people while girls remain somewhat closer to their mothers, fitting a hypothesis that sex differences may appear only briefly when new processes are being formed. Some supporting evidence for this hypothesis with reference to the development of sociability comes from the longitudinal naturalistic home-observation data in the present study which showed a sudden and significant increase in children's social behavior toward the home observer between 13 and 16 months, thus suggesting the possibility of significant new developments in sociability with unfamiliar adults in the period around 16-17 months.

But another question of interest in this study was not (only) whether boys and girls differ in overall sociability, but whether they differ in relative sensitivity to strangers' characteristics; that is, whether they differentially discriminate between different kinds of stranger or stranger behavior. The Maccoby and Jacklin review concludes they do not differ in sensitivity to social cues, but the research upon which that conclusion was based was done with children over 3 years, on measures of empathy. Upon examination of statistical interactions of sex X stranger characteristics in the present study, it appears that girls may be more sensitive than boys to the variable of stranger familiarity, since the significant differences in responsiveness (at 14 months) and playful social

interaction (at 30 months) with stranger and observer were accounted for entirely by the girls in the sample.

Gender is, of course, only one way of categorizing children, and since the data for this report were drawn from a longitudinal study of natural mother-child interaction, we could also relate the children's reactions to strangers to ongoing relations with their mothers. On the basis of a factor analysis of data from home observations at 18-20 months, children were divided into two groups on a dimension of social competence with mother (SCM). This social competence factor included frequency of looking, smiling, vocalizing, and playing with mother when she was in the same room, and the proportion of the mother's social behaviors to which the child responded. Using this dimension, ANOVAs of stranger characteristics X SCM were also calculated for each stranger characteristic. In general, as one would hope, the dimension was reflected in children's behavior to the mother. In semi-structured stranger situations as well as naturalistic ones, in the lab as well as at home, at 30 months as well as 18 months, children high on the SCM factor looked, vocalized, and smiled at their mothers more. Of greater interest here, however, was whether this social competence classification was also related to the child's reaction to strangers. This issue has considerable theoretical significance, since some, such as Bowlby, have suggested that the child's primary attachment relation with mother determines or at least predicts the quality of all his/her subsequent social relations. In terms of 1½-2½ year old children's initial reactions to strangers or brief encounters with somewhat familiar observers, however, the present study did not support this suggestion. At 17-18 months, there were no differences between children who were highly social and responsive with their mothers and those who were not, in social behavior with strangers. At 30 months, the only significant difference (and it appeared in both home and lab visits) was that high SCM children were less imitative and responsive with strangers than low SCM children --

a finding that would not likely be predicted by a theory that made the mother-child relationship the primary and generalizable model for social encounters.

But although social competence with mother may not predict overall social reactions to friendly strangers, perhaps it is related to relative sensitivity to stranger characteristics. In terms of stranger familiarity it was found that, like girls, children who were highly social with mother did indeed differentiate between observer and stranger to a greater extent than children who were low on this dimension, for all behaviors in which there was a difference (positive emotion, social play with toy, responsiveness). This seems to indicate that for young children, at least, the value of a close and responsive relationship with mother is more subtle than mere generalization of behavior from mother to other persons, and may lie in the development of a more sensitive and disciminating approach to social encounters and social relations.

To return to our discussion of the overall effects of stranger familiarity, another variable studied which might be considered a different level of familiarity was the stranger's sex (table 3). In the families studied -- like most American families -- the mother was the primary caregiver and spent vastly more time with the children than did the father. Presumably her friends and visitors were predominantly female also. Thus, in a sense, a female stranger could be considered more familiar than a male. The variable of stranger sex was investigated when the children were 17 and 18 months old. If the effect of the stranger's sex were only a reflection of relative familiarity, we would expect children might be more positive, playful, and responsive to the female. Not so! A different pattern of differences appeared. There was some confirmation that women were perceived as more familiar and comfortable in that children vocalized significantly more to both mother and stranger when the stranger was a woman, (as they did to the mother in the stranger versus mother comparison previously described). (Other interpretations of this difference in vocalization might be

that children expect women to talk with them more, or that, although male and female strangers were instructed to behave identically in the situation, there may have been natural uncontrollable differences in their verbal behavior, or even in their effect on the mother's behavior. Possibly mothers also felt more comfortable when the stranger was a female, and reflected this in behavior toward child and stranger. It would be interesting to explore these possible interpretations further, but unfortunately, we did not collect observations of adult behavior in these stranger situations. We must, therefore, content ourselves with taking the children's behavior at face value to indicate a difference in reactions to male and female strangers, without knowing the particular dimensions of maleness or femaleness that have an effect.)

With the male stranger, there was some tendency for children to show more anxiety or negative affect to the stranger. But they also expressed more positive emotion to the mother during the man's visit -- although they did not interact with mother more. This combination of negative and positive affect, of avoiding or frowning at the man but smiling at the mother, might suggest that strange men are more exciting than strange women in the lives of these mother-dominated children.

Interestingly, there were no significant interactions of sex of stranger with sex of child. But when children were divided according to the SCM factor and these interactions examined, it was found that once again it was the high SCM children who accounted for the differential affective reactions to men and women. In fact, high SCM children (but not low SCM children) demonstrated more affect, positive and negative, to the male stranger than to the female stranger. Low SCM children, on the other hand, vocalized and smiled more to the female, or more familiar, stranger.

Pursuing the theme of familiarity a step further, another dimension of familiarity investigated in the present study was that of situation or procedure (Table 4).

One such comparison was of children's behavior in the stranger probe at 17 months with an identical procedure 3-4 weeks later. Putting aside for the moment the possibility that differences might be attributable to developmental or even meteorological (May/June) changes, we note that during the first visit children vocalized more and expressed more positive emotion -- to mother and stranger. It seems that the situation was more interesting or pleasant the first time around. Some further support for this interpretation comes from comparing a male-female stranger sequence with a female-male sequence (that is, male at 17 months and female at 18 months, or vice versa). In this comparison, all differences in positive social behavior, especially behavior toward mother, favored the male-female sequence. If men are more unusual and exciting and kids see the male stranger first -- some of that excitement may carry over to the next time.

Perhaps a better comparison of situational or procedural familiarity was made within single observational sessions. In both lab and home visits at 30 months, when data were examined for sequence-of-stranger effects, there was some tendency for negative affect and passive looking at the stranger to increase when stranger procedures were repeated. It is likely that this reflects increasing fatigue or reaction to the stress of the experimental situation rather than a difference in familiarity.

To summarize the set of results related to the dimension of familiarity -- of stranger or stranger procedure -- it seems that: (1) children's social behavior is influenced by familiarity, the particular effect depending on how familiarity is defined or assessed. The magnitude and extent of effects is systematically related to the magnitude of the difference in familiarity: greatest between mother (most familiar) and stranger (least familiar); next, between observer (somewhat familiar) and stranger (completely unfamiliar); next, between female stranger (by generalization, more familiar than male stranger, but still a

stranger) and male stranger; and least, between replications of experimental procedures. (2) The particular aspect of social behavior most often or easily influenced was affective, especially positive affect.

(3) In terms of the child's positive, playful, and responsive social behavior there seems to be an optimal level of adult familiarity: somewhat familiar (observer) > totally unfamiliar (stranger) > very familiar (mother). The relation is not strictly monotonic, but parallels the relation in the physical world between the child's exploration and novelty of objects.

(4) The influence of familiarity is determined also by characteristics of children and related to their past experience. There was some indication in the present study that girls and children with more socially competent relations with their mothers differentiate among relative strangers to a greater extent than boys or children with less social relations with mother.

(5) The finding of effects of stranger characteristics on children's social behavior has implications for child development research, particularly testing and observing. Investigators should be aware of potential effects of tester or observer familiarity and particularly if measuring social behavior consider those effects in making methodological and procedural decisions about how long to use the same observer, how much interaction with observer or tester to allow, whether observer or tester should be male or female, and so on.

The second major category of stranger contrast -- the comparison of individual persons who acted as strangers -- can be disposed of relatively quickly. To our methodological and economic relief -- because the same research assistants had served as strangers in various different, counter-balanced, stranger conditions -- there were no significant differences in children's social reactions to different individuals (table 5). Our research assistants were alike, however, in age, sex, and race, and relatively similar in size and appearance. Dramatic differences in these stranger qualities would undoubtedly

affect children's behavior, as well, and would be an intriguing line of research. This was not, however, one of the manipulations in the present study. The finding that children's behavior was not affected by which individual person acted as stranger is important, not only because it justifies the overlapping use of research assistants in different experimental conditions, as strangers, testers, or observers, but also because it contrasts so markedly to the differential social reactions elicited by behavioral differences among strangers. This kind of contrast is the third category of stranger differences discussed in the present paper, and one to which we now turn.

The first experimental manipulation of stranger behavior, which occurred in the laboratory at 30 months, was the most indirect in terms of the stranger's actual behavior toward the child. It involved variation in what we labelled "stranger mood" (table 6), and consisted of prescribed verbal exchanges between stranger and mother, during which the child was more or less ignored, followed by the approach sequence that has been described. In each interaction condition, the stranger entered the room and sat in a chair next to the mother. There ensued one of three distinctly different interactions:[1] (1) the neutral "silent stranger" ignored and was ignored by the mother, as each looked out the window, at magazines, etc., for a 5-minute period — a typical waiting room scene;[2] (2) the

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1. Order counterbalanced

2. A better experimental manipulation for "neutral mood", that would be comparable to the happy and hostile interactions, would involve a conversation between mother and stranger that was unemotional but equally interesting to that of "happy" or "hostile" stranger.

"hostile stranger" stomped into the room and launched into an angry and insulting dialogue with the mother (both guided by a previously prepared script) about who had just stolen whose parking space -- not a trivial issue in New Haven! -- and about to whom the magazine the mother was reading belonged; (3) the "happy stranger" bounced into the room delighted to have just won a trip to Bermuda and full of joy, compliments, and animated conversation. She and the mother shared the magazine.

This manipulation of the stranger's behavior was designed to explore children's sensitivity to the emotional tone of adult interaction, and their reactions to strangers who participated in such interchanges. Clinicians and parents claim that children are sensitive to subtle emotional cues and conflicts, especially between their parents, and this was an assumption we wanted to explore empirically. As it turned out, very few of the children's social behaviors were affected by the tone of the mother-stranger interaction. There was no significant difference in children's social approach to the stranger (going to, smiling, playing, vocalizing) or in their distal social behavior to the mother (looking, vocalizing), either during the biased interaction or in the approach sequence which followed. Children were equally interested in the happy and hostile interactions, equally willing to approach and play afterwards with the happy or hostile stranger. If anything, they were <u>more</u> willing to play with the hostile stranger. During the biased interaction, but not during the approach sequence, children did look at the silent stranger significantly less than at the happy or hostile strangers, but this difference more accurately reflects a difference in stranger stimulatingness rather than a difference in mood. Only one kind of behavior was clearly different for happy and hostile mother-stranger interactions: that was the child's physical contact with the mother (touching, going to, staying close to, fussing). Contrary to an expectation based on a concept of differential stranger anxiety, during both the interactions and the approach sequence, the

the child was in physical contact with the mother less with the hostile stranger and more during and following the happy interaction. Since only the child's behavior toward the mother and not his/her behavior to the stranger was affected, a plausible interpretation of this finding might be that children were affected by the mother's mood rather than the stranger's. Remember, the manipulation created not just a happy or hostile stranger, but also a correspondingly happy or hostile mother. Informal observation of the situation seemed to suggest that what was happening was that when something pleasant, fun, and exciting was going on -- in this case, between mother and stranger -- the child wanted to be in on it. S/he came over to the mother and attempted to participate in the interaction, or to get the mother's attention while staying close to and holding on to the mother. The negative affect expressed was a result of the mother's discouraging the child's participation and not giving him/her her attention. When the mother was acting hostile, on the other hand, even though that hostility was directed at someone else, the child was more likely to stay away. Only one precociously articulate little girl stood up for her mother against the diatribe of the hostile stranger -- and that from a discreet distance on the other side of the room, while she pretended to be playing with a toy. It may well be that the emotional tone of interaction between parents affects children's behavior, or even that children are sensitive to adults' moods, but they are not so likely to react to the mood of a transient stranger. If there is a reaction to the tone of the interaction, moreover, it has no apparent longlasting effect on preferential social behavior with strangers assessed immediately after the interaction or at the end of the visit some 20 minutes later, when the child was asked to play with, give a cookie to, or react to pictures of the three strangers.

Our next attempt to examine effects of adult behavior was one which involved more direct interaction with the child. Two strangers, in turn, came to

visit the child at home. The children were still approximately 2½ years old. One stranger[1] was "nice" to the child -- she was instructed to play with the child in a cooperative, friendly way with toys the child liked, for 7 minutes. The other stranger was "nasty" -- for several minutes she played cooperatively, but then she accused the child of breaking an already-broken toy, reprimanded the child no matter what he or she did, took the toys away, and acted unfriendly, insulting, selfish, and demanding, for three minutes. After this biased interaction, the stranger went through the approach sequence with the child as usual. This dimension was labelled stranger "manner" (table 7), and it was related to children's social behavior. For no type of social behavior was the nasty stranger ever reacted to more positively than the nice stranger. However, the largest and only statistically significant differences noted were ones which could be clearly classified as positive (going to, smiling, positive vocalization, cooperation) -- which were directed to the "nice" stranger -- or negative (avoiding, aggressing, frowning, fretting, saying "no") -- to the "nasty" stranger. The difference in positive behavior occurred not only during the interaction -- which might be expected -- but also colored the subsequent approach sequence in which both nice and nasty strangers behaved identically. It appears that a stranger's manner during direct interaction with the child can have a strong effect on the child's positive or negative social behavior toward that person. In contrast to the "mood" manipulation no effect of "manner" was apparent in the child's behavior with the mother during or after the interaction with the stranger. Children behaved relatively more positively (to the nice stranger) or negatively (with the nasty stranger), but they did not involve their mothers differentially. The picture was not one of children frightened by the nasty

1. Order counterbalanced.

stranger and running to mother. Behaviors directed to the mother were, in fact, quite infrequent during the stranger's visit in this home situation.

Another dimension of stranger behavior which was examined during this home visit at 30 months was "interactive style"; that is, whether the stranger was stimulating and initiated play activities, or responsive and receptive to the child's suggestions and play activities (table 8). Strangers were instructed to play with the child and a toy according to one of these two different styles for 2 minutes, wait for 1 minute, then switch to the other style for 2 minutes, and wait another minute. Children's behavior toward the stranger was later divided into corresponding categories of initiating or responsive. In a 2 X 2 ANOVA for these two kinds of adult and child behavior, the interaction was highly significant: that is, when the stranger was initiatory, the child behaved responsively, when the stranger was responsive and non-initiatory, the child took more initiative in the interaction.

There are two reasons this finding is of interest: first, although we deliberately biased the stranger's behavior, we of course gave no similar instruction to the child -- yet in the interaction the child behaved in a style complementary to the stranger's; and second, the predominant style of stranger behavior, even in so brief a period as 2 minutes, seemed to create for the child expectations about interaction patterns so that s/he continued to act according to those expectations (at least during the next minute) even when the stranger stopped interacting. Again, this manipulation provides a demonstration of the sensitivity of the social behavior of young children to variation in the social context, in this case, the interactive style of adults.

The final dimension of stranger behavior examined in the study, in both home and lab at 30 months, was the communicative "mode" of stranger behavior;

that is, whether the stranger ignored, looked at, talked to, played with, or cuddled the child (table 9). Of all the behavioral manipulations attempted, it was this one which was most clearly and consistently discriminating. No difference was evident in the child's physical contact with mother or negative emotion expressed[1]: the difference is not one of stranger anxiety or fear, but clearly one of relative sociability or positive social responsiveness. When the stranger was not looking at the child, although they watched her, children, uniformly, initiated exceedingly little or no interaction with her. Only one -- insensitive -- child vocalized to her, for instance![2] Even at 2½, children seem to know some norms or basic rules of social exchange, to have expectations about the probability of adults' reciprocal social participation, and/or to be exceedingly sensitive to social cues of unresponsiveness. When the stranger merely looked at the child, however, this behavior opened the lines of communication between them. Then, children not only looked at the stranger, but also vocalized, smiled, and approached. And with any kind of friendly overture from the stranger - by smiling, talking, or playing - the social behavior of the child to the stranger increased dramatically. Communication (looking and vocalizing) with the mother correspondingly decreased, particularly in the laboratory setting. These differences were robust and highly significant: they occurred in two settings, were of a considerable order of magnitude (e.g. 16 X for difference

1. Measures of children's social behavior were, of course, calculated on the basis of equal time for each mode of stranger behavior.

2. This child who seemed oblivious to the strangers' unresponsiveness and persisted in vocalizing to her was accustomed to such interaction: his mother spent most of her time at home watching TV and only occasionally directing a comment to the child.

in social approach) and a high level of significance ($p < .001$).

To discover which particular mode of interaction might have the greatest attraction for young children, interactive mode in the home visit was further analyzed into stranger talking, playing with toy, talking and playing with toy, talking and playing physically with the child. (No attempt was made to control the strangers' smiling; they behaved in a pleasant, friendly manner throughout these interactions). The only differences resulting from stranger talk, play, and talk-and-play conditions were situationally logical ones: there was more social play involving objects in play and talk-play conditions (than during talk or physical play episodes); there was more vocalizing in the stranger talk conditions. Otherwise, any mode of friendly, distal social interaction elicited social behavior and positive emotion -- there did not appear to be one most effective mode.

Physical contact from a stranger has been found in previous research with younger children to produce negative reactions. With 2½ year olds, although there was a tendency ($p < .08$) for more negative affect during the physical contact episodes, no significant difference in negative behavior or contact with or appeal to the mother was observed. Moreover, in fact, positive emotion and responsiveness to the stranger were <u>greatest</u> during physical interaction. There was also a tendency for the child to look at the stranger more during physical contact, possibly because there was not a toy to look at.

To consider the possibility that some children differentiate more than others between happy and hostile stranger mood, or nice and nasty stranger manner, we examined sex and SCM interactions with these stranger variables as we had with stranger familiarity (tables 6, 7). None were significant. We also examined interactions of sex and SCM with stranger mode of communication or interaction. Very few differences approached significance (tables 6, 9). The one significant interaction related to children's social competence with mother (SCM) was for

responsiveness to the stranger. Although low SCM children were relatively more responsive to the stranger during physical contact episodes than during other modes of stranger behavior, children who had closer relations with their mothers (high SCM) responded to physical and verbal-playful behavior of the stranger equally. One might think of these high SCM children as less "promiscuous", in some sense: having a strong and satisfying relationship with one person (the mother), they were less susceptible to the physical advances of a stranger. One possible sex difference is interesting: girls were relatively more likely to ignore the silent non-interactive stranger than were boys and more likely to attend to strangers who were talking (to them or to their mothers). This difference does fit with research or stereotypes that separate girls and boys on a verbal dimension. The level of significance and small sample size make these differences inconclusive, of course, but one thing they do is to suggest that differences between the social patterns of young boys and girls or of children who are more or less attached to their mothers, may differ in more subtle ways than are revealed by gross comparisons of sociability or social responsiveness with a standard stranger across different episodes.

In conclusion, to give a brief summary -- with strong qualifications because of the methodological limitations of the study -- the present investigation suggests that by the time they are 14 months old (if not before) and increasingly over the next year and a half, children spontaneously initiate positive social behavior and are appropriately responsive to adults whom they have never met before -- even rather nasty ones. The emphasis on fear and anxiety toward strangers in research on young children's social responsiveness has been somewhat misplaced or at least one-sided. In our sample, at 14, 17, 18 and 30 months, there was no evidence of negative affect toward the stranger (avoidance, frowning, fretting, crying) for

half the children, and by 30 months expressions of negative affect were quite infrequent altogether. The reasons for this lack of a fear reaction undoubtedly include the somewhat older age of the children in this sample compared with those typically used as subjects in stranger studies, the non-threatening (mother-present) and generally non-intrusive (child initiates advances) procedures used by the strangers, and the longitudinal context of the study, in which children may have become accustomed to unfamiliar observers doing odd things.

Not only was their general response to strangers positive, but the behavior of these 2½ year olds was clearly influenced by the particular characteristics of the person with whom they were interacting. This effect was observed for relative familiarity of the persons and for variations in their behavior. Children, even at this early age, seemed to know some basic social rules or norms of communication or interaction, and to behave accordingly. For example, they did not talk to or spontaneously approach strangers who were ignoring them, but did initiate social advances when the stranger was looking. Furthermore, it was clear that young children are sensitive to many variations in the immediate social context. For example, they were responsive when the stranger initiated activities, initiatory when the stranger was responsive; they responded to "nice" strangers more positively, "nasty" strangers more negatively; they stayed close to mother when she was pleasant but not when she was in an angry mood. Of the social context variables studied, the most powerful influence on the children's social competence was the communicativeness of the adult. It was also suggested by the study that the effects of social context persist beyond the immediate interaction, at least for the next five minutes that were observed. For example, the children remained more friendly with nice strangers, more initiatory with strangers who had been responsive. As well as affecting the child's behavior toward the stranger, stranger characteristics also affected the child's behavior to the

mother, although to a lesser extent. The need, therefore, for taking into account such characteristics and behaviors of testers, experimenters, and observers - as well as strangers - particularly in assessing children's social relations and social development, is obvious. If such characteristics and behaviors are controlled, however, the study suggests that children may respond comparably to different individuals. The behavioral or familiarity characteristics of adults had a clearer effect on children's behavior than did the child's sex or his/her relation with the mother. This suggests, finally, that in our search for determinants of children's development of social relations, we need more complicated analyses of individual differences than gender differences in overall social behavior or than simply the child's attachment to mother.

TABLE 1

DIFFERENCES IN CHILDREN'S SOCIAL BEHAVIOR TO MOTHER AND STRANGER[a]

C's Social Behavior	Mean Scores		F^b
	to Mother	to Stranger	M vs S
Looks at	73.64	95.36	5.06*
Vocalizes to	50.71	24.71	6.57*
Postive affect,Plays	11.36	30.50	4.33+
Negative affect,Avoids	7.57	8.14	0.06
Goes to	5.79	5.27	0.05
Physical contact	50.79	0.50	10.70**
Close proximity	75.43	18.00	18.41***
Responsive, Imitates	28.57	59.29	11.29**

[a]Assessed in lab at 30 months

[b]Analysis of variance, df=1, 13.

+ $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$.

TABLE 2

DIFFERENCES IN CHILDREN'S SOCIAL BEHAVIOR TO OBSERVER AND STRANGERS

C's Social Behavior	Mean Scores for Girls			for Boys			F^c	F^d	F^c
	to O	to S1	to S2	to O	to S1	toS2	OvsS	Csex	sex X OvsS
Interest in[a]	11.00	11.29		12.57	14.57		0.72	1.17	0.39
Looks at[b]	42.71	39.00	56.43	43.57	45.86	49.43	2.22	0.01	0.77
Vocalizes to[b]	28.00	29.43	24.00	39.43	28.57	30.71	0.67	0.57	0.55
Positive affect[a]	20.43	4.56		18.29	9.86		24.61***	0.83	1.79
Positive affect[b]	26.00	14.57	18.86	22.29	14.14	18.14	5.82**	0.19	0.13
Plays with[b]	41.43	16.57	12.29	19.71	23.00	10.14	6.56**	0.63	4.23*
Negative affect[a]	4.14	4.87		2.14	2.86		0.17	0.30	0.27
Negative affect, avoids[b]	1.57	1.43	0.86	1.43	0.43	2.29	0.42	0.02	1.41
Initiates[a]	1.86	5.71		2.57	7.43		4.49*	0.29	1.50
Goes to[b]	0.86	2.00	0.57	1.00	0.71	1.29	0.43	1.56	1.99
Physical contact[b]	14.00	21.14	2.86	3.29	3.14	1.29	2.01	2.36	1.23
Responsive[a]	19.71	10.29		18.71	15.57		17.91**	1.27	4.03*
Imitates[b]	4.00	0.57	1.71	2.71	1.00	0.71	2.47+	0.27	0.25
Responsive[b]	44.86	12.43	15.86	35.57	15.00	10.86	27.10***	0.90	1.05
Looks, Voc to M[b]	4.50	11.00	4.50	11.67	13.33	4.00	0.03	0.02	3.17
Physical attach.M[b,e]	2.50	1.00	3.50	2.00	12.75	1.00	0.28	0.22	0.54

[a]Assessed in home at 14 months

[b]Assessed in home at 30 months

[c]Analysis of variance, df variables[a] = 1 ,12; df variables[b] = 2, 24

[d]Analysis of variance, df variables[a] = 1 ,12; df variables[b] = 1, 12

[e] physical attachment to M = sum (physical contact, goes to M)

+ $p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

TABLE 2 continued

DIFFERENCES IN CHILDREN'S SOCIAL BEHAVIOR TO OBSERVER AND STRANGERS

C's Social Behavior	Mean Scores for Hi SCM[a] Children			Mean Scores for Lo SCM Children			F^d	F^c
	to O	to S1	to S2	to O	to S1	to S2	SCM	SCM X OvsS
Looks at[b]	42.00	48.00	57.86	44.29	36.86	48.00	0.78	0.89
Vocalizes to[b]	29.71	35.00	28.29	37.71	23.00	26.43	0.06	1.53
Positive affect[b]	29.57	11.29	14.14	18.71	17.43	22.86	0.13	6.82**
Plays with[b]	28.43	7.86	7.43	32.71	31.71	15.00	3.18+	1.92
Negative affect, avoids[b]	1.71	1.57	2.29	1.29	0.29	0.86	2.81	0.25
Goes to[b]	0.57	1.71	0.71	1.29	1.00	1.14	0.16	0.99
Physical contact[b]	12.86	20.86	0.57	4.43	3.43	3.57	1.24	2.01
Initiates[b]	4.86	0.43	0.86	1.86	1.14	1.57	0.19	1.50
Responsive[b]	40.71	11.29	8.57	39.71	16.14	18.14	1.21	0.80
Look, vocs to M[b]	10.00	9.33	18.67	7.00	10.50	2.00	0.55	0.62
Physical attach.M[b]	2.50	13.25	2.50	1.50	0.00	0.50	0.89	0.41

[a]SCM= Social Competence with Mother

TABLE 3

DIFFERENCES IN CHILDREN'S SOCIAL BEHAVIOR TO FEMALE AND MALE STRANGERS[a]

C's Social Behavior	Mean Scores for Girls to Female S	Mean Scores for Girls to Male S	Mean Scores for Boys to Female S	Mean Scores for Boys to Male S	F[b] S Sex	F[b] C Sex	F[b] SsexXCsex
Looks at	10.71	10.71	10.86	10.43	0.17	0.03	0.17
Vocalizes to	3.86	2.14	6.57	3.71	4.29*	5.78*	0.21
Positive affect	16.29	19.43	24.14	21.57	0.01	1.44	0.71
Negative affect, avoids	15.00	23.71	10.71	14.14	3.24+	1.36	0.60
Physical contact	4.43	3.86	7.14	6.43	0.40	2.43	0.01
Initiates	8.71	6.14	13.67	13.50	0.15	4.60*	0.14
Responsive	25.57	26.71	34.00	26.57	1.20	1.84	2.52
Looks at M	16.00	14.43	12.33	13.00	0.31	2.04	1.76
Vocalizes to M	8.00	5.14	7.00	4.67	10.41**	0.13	0.10
Positive affect to M	7.43	11.57	7.67	9.67	5.67*	0.10	0.40
Physical contact M	45.43	45.00	24.33	25.50	0.02	3.69+	0.01

[a]Assessed at home at 17 and 18 months

[b]Analysis of variance: df = 1, 12

+$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$

TABLE 3 continued

DIFFERENCES IN CHILDREN'S SOCIAL BEHAVIOR TO FEMALE AND MALE STRANGERS

	Mean Scores for Hi SCM children		Mean Scores for Lo SCM children		F^b	F^b
	to FemaleS	to MaleS	to Female S	to Male S	SCM	SsexX SCM
Looks at	10.71	10.29	10.86	10.86	0.78	0.17
Vocalizes to	4.00	3.86	6.43	2.00	0.07	3.77+
Positive affect	18.86	24.86	21.57	16.14	0.49	3.48+
Negative affect,avoids	9.71	19.00	16.00	18.86	0.24	0.91
Physical contact	7.00	6.71	4.57	3.57	2.76	0.12
Initiates	10.17	12.83	11.71	6.71	0.43	1.61
Responsive	29.57	29.14	30.00	24.14	0.51	0.90
Looks M	16.67	16.67	12.29	11.29	14.79**	0.31
Vocs M	10.67	7.67	4.86	2.57	20.41***	0.19
Positive affect M	7.67	16.50	7.43	5.71	8.06*	61.52***
Phys. Contact M	39.83	46.17	32.14	27.29	1.22	1.02

TABLE 4A

DIFFERENCES IN CHILDREN'S SOCIAL BEHAVIOR RELATED TO SEQUENCE OF STRANGER PROBES[a]

C's Social Behavior	Mean Scores: Stranger at 17 months	Stranger at 18 months	Male-Female Sequence	Female-Male Sequence	F^b 17vs18m	F^b M-FvsF-M Sequence
Looks at	10.5	10.8	10.5	10.9	0.19	0.72
Vocalizes to	5.1	3.0	4.1	4.0	4.32+	0.00
Positive affect	23.6	18.2	22.8	19.0	6.77*	1.05
Neg. Affect, avoids	17.2	14.5	13.8	17.9	0.54	0.43
Physical contact	5.5	5.2	6.9	3.7	0.11	4.75+
Initiates	12.9	8.3	12.3	8.9	2.38	1.40
Responsive	29.6	26.6	29.1	27.0	1.57	0.42
Looks M	14.7	13.4	16.3	11.8	1.90	14.97**
Vocs M	6.6	6.5	9.5	3.5	0.03	23.69***
Positive Affect M	11.6	6.7	11.9	6.4	46.68***	9.64**
Phys. Contact M	38.0	31.4	39.2	30.1	1.30	0.72

[a]Assessed at home at 17 and 18 months

[b]Analysis of Variance, df= 1, 13

+$p < .10$; *$p < .05$; ** $p < .01$; *** $p < .001$

TABLE 4B

DIFFERENCES IN CHILDREN'S SOCIAL BEHAVIOR RELATED TO SEQUENCE OF STRANGERS

C's Social Behavior	Mean Scores to Stranger 1	to Stranger 2	to Stranger 3	F[c] seq
Looks at[a]	28.71	33.57	33.07	2.81+
Looks at[b]	42.43	52.93		4.20+
Vocalizes to[a]	11.29	7.07	6.36	0.58
Vocalizes to[b]	29.00	27.36		0.07
Positive affect[a], plays	15.86	8.14	6.50	1.64
Positive affect[b]	14.36	18.50		1.68
Plays[b]	19.79	11.93		2.59
Negative affect[a]	1.57	1.43	4.57	3.17+
Negative affect[b]	0.93	1.57		0.93
Goes to[a]	2.43	1.07	1.79	0.84
Goes to[b]	1.36	0.93		0.56
Physical contact[a]	0.43	0.00	0.07	0.83
Physical contact[b]	12.14	2.07		2.32
Close proximity[a]	4.79	6.86	6.36	0.60
Responsive, imitates[a]	7.64	4.57	3.14	1.51
Responsive, imitates[b]	14.50	14.57		0.57
Look, voc M[a]	42.43	33.78	41.00	1.65
Look, voc M[b]	9.79	9.71		0.00
Positive affect M[a]	5.36	2.36	3.64	2.27
Physical attachment M[a,d]	43.92	42.92	45.14	0.32
Physical attachment M[b,d]	10.57	5.93		0.75

[a]Assessed in Lab at 30 months

[b]Assessed at home at 30months

[c]Analysis of Variance of variables [a]=2,13; variables [b]= 1, 13

[d]ysical attach M=Sum (phys. contact, goes to, close proximity, neg. affect to M)

≤ .10

TABLE 5

DIFFERENCES IN CHILDREN'S SOCIAL BEHAVIOR TO INDIVIDUAL STRANGERS[a]

C's Social Behavior	Mean Scores to Stranger A	to Stranger B	F[b] SAvsSB
Looks	43.07	52.29	3.01
Vocalizes	32.71	23.64	2.40
Pos. Affect	14.57	18.29	1.31
Plays	19.36	12.36	1.98
Neg. Affect	1.71	0.79	2.09
Goes	1.21	1.07	0.06
Physical Contact	9.29	4.93	0.38
Responsive, imitates	12.64	16.43	1.00
Looks, voc M	10.14	9.36	0.05
Phys. attach.M	8.21	8.29	0.00

[a]Assessed at home at 30 months

[b]Analysis of Variance, df = 1, 13

TABLE 6

DIFFERENCES IN CHILDREN'S SOCIAL BEHAVIOR RELATED TO STRANGER'S MOOD[a]

C's Social Behavior	Mean Scores of Girls			Mean Scores of Boys			F^e	F^f	F^e
	to Neutral (silent) Stranger	to Happy Stranger	to Hostile Stranger	to Neutral (silent) Stranger	to Happy Stranger	to Hostile Stranger	Smood	Csex	moodXsex
Looks at[b]	8.14	17.86	16.14	11.00	13.45	14.71	10.18***	0.11	3.19+
Looks at[c]	20.43	19.43	16.86	18.14	17.00	17.86	0.83	0.14	0.87
Looks at[d]	28.57	37.29	33.00	28.86	34.71	28.29	7.14**	0.15	0.78
Vocalizes[d]	7.00	6.57	7.43	15.57	9.29	3.57	0.67	0.21	0.79
Pos. affect,plays[d]	11.14	10.14	9.43	20.57	6.57	3.14	1.63	0.00	1.76
Soc. interaction[b, g]	3.43	3.43	1.57	1.14	3.14	2.43	0.61	0.32	0.77
Soc. interaction[c]	18.00	17.14	20.43	16.29	10.71	16.14	1.54	0.41	0.41
Soc. interaction[d]	18.43	18.57	17.71	40.71	17.57	8.00	1.15	0.10	1.12
Goes	0.29	1.86	0.86	4.57	1.71	1.29	0.83	1.11	3.06+
Close proximity[d]	6.86	6.57	6.29	2.71	9.29	4.29	1.65	0.23	1.78
Neg. affect[d]	2.14	1.43	4.71	2.57	4.29	1.14	0.07	0.01	2.16
Resp, imit[d]	7.64	3.00	4.71	10.43	3.00	4.43	1.71	0.31	0.82
Look, voc^M[b]	26.71	22.86	23.29	21.14	15.71	20.71	1.93	0.62	0.47
Look, voc^M[c]	14.14	16.71	16.71	22.86	20.29	13.00	0.75	0.31	1.90
Look, voc, pos^M[d]	48.29	42.57	44.57	47.29	40.57	33.57	1.71	0.18	0.67
Phys. $attach^M$[b]	13.71	25.71	20.00	23.00	32.43	21.57	3.71*	0.27	0.39
Phys. $attach^M$[c]	20.29	20.57	8.86	28.14	28.00	19.00	4.37*	1.21	0.06
Phys. $attach^M$[d]	34.14	53.43	29.71	56.86	65.43	42.43	9.97***	0.75	0.62

Note. — Phys. contact with Stranger did not occur sufficiently often to warrant analysis

[a]Assessed in lab at 30months

[b]during biased S-M interaction

[c]during approach seq. with S

[d]during entire visit

[e]Analysis of Variance, df=2,24

[f]Analysis of Variance, df=1,12

[g]Social interaction= Sum (goes,pos affect, plays, vocs, responsive)

+p<.10; *p<.05; **p<.01; ***p<.001

TABLE 6 continued

DIFFERENCES IN CHILDREN'S SOCIAL BEHAVIOR RELATED TO STRANGER'S MOOD

C's-Social Behavior	Mean Scores of Hi SCM Children			Mean Scores of Lo SCM Children			F^f	F^e
	to Neutral (Silent) Stranger	to Happy Stranger	to Hostile Stranger	to Neutral (Silent) Stranger	to Happy Stranger	to Hostile Stranger	SCM	MoodXSCM
Looks at[b]	11.00	14.43	14.71	8.14	16.86	16.14	0.01	1.69
Looks at[c]	20.00	19.14	19.14	18.57	17.29	15.58	0.51	0.29
Looks at[d]	31.00	35.57	31.86	26.43	36.43	29.43	0.12	0.94
Vocalizes[d]	5.86	5.71	4.71	16.71	10.14	6.29	1.15	0.45
Pos. aff.,plays[d]	8.57	7.71	3.14	23.14	9.00	9.43	1.70	0.72
Soc. interaction[b, g]	3.14	2.43	0.43	1.43	4.14	3.57	1.16	2.10
Soc. interaction[c]	12.14	11.14	12.29	22.14	16.71	24.29	2.32	0.82
Soc. interaction[d]	15.14	14.57	8.43	44.00	21.57	17.29	1.61	0.58
Goes[d]	0.71	1.14	0.57	4.14	2.43	1.57	1.82	0.79
Close proximity[d]	6.71	9.43	4.00	2.86	6.43	6.57	0.36	1.76
Neg. affect[d]	3.00	3.57	2.43	1.71	2.14	3.43	0.17	0.33
Resp, imitates[d]	1.71	1.43	3.14	13.57	4.57	6.29	6.04*	1.96
Looks, vocs.M[b]	27.29	21.29	27.00	20.57	17.29	17.00	1.20	0.80
Looks, vocs.M[c]	20.43	20.86	17.29	16.57	16.14	12.43	0.79	0.01
Looks, vocs, pos. affect M[d]	53.71	45.00	44.86	41.86	38.14	33.29	0.86	0.17
Phys. attach M[b]	26.57	28.71	27.29	10.14	29.43	14.29	0.75	2.42
Phys. attach M[c]	23.57	28.43	11.57	24.86	20.14	16.29	0.01	1.40
Phys. attach M[d]	53.43	59.43	41.00	37.57	59.43	31.14	0.21	1.18

TABLE 7

DIFFERENCES IN CHILDREN'S SOCIAL BEHAVIOR RELATED TO STRANGER'S MANNER

C's Social Behavior	Mean Scores of Girls to Nice S	Mean Scores of Girls to Nasty S	Mean Scores of Boys to Nice S	Mean Scores of Boys to Nasty S	F^d manner	F^d Csex	F^d mannerXsex
Looks	32.71	32.43	29.57	29.57	0.00	0.33	0.00
Vocalizes	17.71	15.57	22.43	14.43	1.24	0.12	0.42
Pos. affect	13.57	8.29	10.00	9.00	2.79	0.29	1.30
Plays	8.71	6.57	8.57	6.57	0.50	0.00	0.00
Goes	1.57	0.43	1.14	0.43	4.49*	0.22	0.24
Physical contact	5.71	8.14	2.14	0.57	0.01	3.41+	0.26
Imitates	0.86	0.71	0.86	0.43	0.67	0.16	0.17
Responsive	7.14	4.71	5.86	3.71	2.39	0.42	0.01
Sum Positive Social Behavior[b]	16.43	8.86	13.29	7.71	11.10**	1.49	0.26
Sum Negative Social Behavior[c]	1.29	4.43	1.43	3.43	7.78*	0.13	0.38
Sum Positive Social Behavior only during biased interaction	12.71	8.78	13.00	7.28	3.24+	0.05	0.11
Look, Voc.M	16.43	9.43	5.43	7.71	0.44	1.39	1.69
Phys. Attach.M	13.43	10.43	1.71	0.43	0.25	1.64	0.04

[a]Assessed at home at 30 m. during biased interaction and approach sequence.

[b]Sum pos=Sum(pos. voc, play, voc, resp, imit, coop, smiles, affectionate touch)

[c]Sum neg=Sum(neg. voc, avoid, aggress, refuse, frown, cry)

[d]Analysis of Variance: df=1, 12

+p< .10; *p< .05; **p< .01; ***p< .001

TABLE 7 continued

DIFFERENCES IN CHILDREN'S SOCIAL BEHAVIOR RELATED TO STRANGER'S MANNER[a]

C's Social Behavior	Mean Scores of Hi SCM Children to Nice S	Mean Scores of Hi SCM Children to Nasty S	Mean Scores of Lo SCM Children to Nice S	Mean Scores of Lo SCM Children to Nasty S	F[d] SCM	F[d] SCMXmanner
Looks	35.57	33.86	26.71	28.14	2.21	0.22
Vocalizes	23.29	15.29	16.86	14.71	0.48	0.42
Pos. Affect	9.00	7.57	14.57	9.71	2.52	0.80
Plays	5.71	4.29	11.57	8.86	2.21	0.05
Goes	1.14	0.57	1.57	0.29	0.02	0.69
Physical contact	3.29	6.57	4.57	2.14	0.22	0.55
Imitates	0.29	0.43	1.43	0.71	6.00*	1.69
Responsive	4.71	3.14	8.29	5.29	3.25+	0.24
Sum Pos. Social	14.14	7.57	15.57	9.00	0.62	0.00
Sum Neg. Social	2.29	5.00	0.43	2.86	3.64+	0.02
Sum Pos. Social only during biased interaction	12.78	6.85	12.93	9.21	0.23	0.17
Look, Voc. M	18.86	12.00	3.00	5.14	5.94*	1.57
Phys. Att. M	13.86	8.43	1.29	2.43	1.16	0.62

TABLE 8

DIFFERENCES IN CHILDREN'S INITIATIVE AND RESPONSIVENESS RELATED TO STRANGER'S PLAY STYLE[a]

C's Social Behavior	Stranger's Play Style		F[b]	F	F
	Stimulating-Initiating	Responsive	S style	C/beh	SstyleXCbeh
Initiating	8.29	12.21	0.43	0.01	9.93**
Responsive	11.79	9.14			

[a]Assessed at home at 30 months

[b]Analysis of Variance, df=1, 13

**$p < .01$

TABLE 9

DIFFERENCES IN CHILDREN'S BEHAVIOR RELATED TO STRANGER'S INTERACTIVE MODE

C's Social Behavior	Mean Scores for Girls				Mean Scores for Boys				F^d mode	F^e sex	F^d mXs
	when S ignores	looks	talks/plays	phys contact	when S ignores	looks	talks/plays	phys contact			
Looks at S[a]	60.14	61.14	148.57		57.29	72.00	121.43		54.99***	0.17	2.89+
Looks at S[b]		1.86	2.99	4.06		1.31	3.67	4.06	41.48***	0.02	2.44+
Vocalizes S[b]		0.64	2.20	1.89		0.69	2.51	2.26	49.19***	0.42	0.46
Pos. Affect[b]		0.34	1.41	3.49		0.34	1.16	3.03	55.59***	0.59	0.33
Plays[b]		0.47	1.81	0.26		0.33	1.06	0.31	20.45***	1.17	2.29
Goes[b]		0.09	0.07	0.09		0.09	0.04	0.14	0.88	0.07	0.43
Physical contact[b]		0.16	1.53	1.46		0.43	3.43	5.43	5.11**	2.57	1.57
Imitates[b]		0.04	0.07	0.23		0.01	0.16	0.11	4.29*	0.07	2.09
Responsive[b]		0.11	2.33	3.54		0.09	1.83	3.17	26.53***	0.48	0.15
Soc. approach[a,c]	13.71	36.29	148.57		8.14	117.57	179.29		6.40**	0.54	0.52
Soc. approach[b,c]		1.54	4.84	5.71		1.44	4.44	5.74	66.39***	0.07	0.17
Neg. Affect[b]		0.03	0.03	0.37		0.01	0.03	0.31	2.87+	0.04	0.02
Look, vocM[a]	264.57	96.00	47.14		227.71	105.86	65.00		19.67***	0.01	0.43
Look, vocM[b]		1.29	0.79	0.86		0.86	0.57	0.29	1.37	0.49	0.16
Phys. Attach. M[a]	46.00	28.43	32.86		66.57	74.29	93.57		0.33	2.22	0.96
Phys. Attach. M[b]		1.00	1.43	0.71		0.86	0.57	0.14	1.37	0.38	0.46

[a]Assessed in lab at 30 months
[b]Assessed in home at 30 months
[c]Soc. app= sum(go, pos, play, voc)
[d]Analysis of Variance, df=2,24
[e]Analysis of Variance, df=1,12

TABLE 9 continued

DIFFERENCES IN CHILDREN'S BEHAVIOR RELATED TO STRANGER'S INTERACTIVE MODE

C's Social Behavior	for Hi SCM ch				for Lo SCM ch				F^e	F^d
	when S ignores	looks	talks/plays	phys contact	when S ignores	looks	talks/plays	phys contact	SCM	modeXSCM
Looks at S[a]	58.86	74.43	144.29		58.57	58.71	125.71		0.56	0.64
Looks at S[b]		1.74	3.51	4.00		1.43	3.14	4.11	0.29	0.39
Vocalizes[b]		0.81	2.33	1.89		0.51	2.39	2.26	0.01	1.88
Pos. affect[b]		0.30	1.44	2.86		0.39	1.13	3.66	0.37	2.33
Plays[b]		0.43	1.19	0.34		0.37	1.68	0.23	0.16	1.37
Goes[b]		0.09	0.03	0.06		0.08	0.08	0.17	3.15+	0.91
Physical contact[b]		0.16	1.16	0.97		0.04	0.71	1.03	0.11	0.30
Imitates[b]		0.04	0.13	0.20		0.01	0.10	0.14	0.27	0.05
Responsive[b]		0.13	2.13	2.20		0.07	2.03	4.43	2.77	6.01**
Soc approach[a]	10.86	78.71	101.43		11.00	75.14	226.43		0.72	1.58
Soc approa		1.63	4.33	5.14		1.36	4.96	6.31	0.79	2.11
Neg affect[b]		0.04	0.03	0.57		0.00	0.03	0.11	2.06	1.53
Look, vocM[a]	258.86	116.71	50.71		233.43	85.14	61.43		0.15	0.26
Look, vocM[b]		2.14	1.36	1.00		0.00	0.00	0.14	12.20**	2.47
Phys. attach. M[a]	63.71	66.29	79.29		48.86	36.43	47.14		0.73	0.19
Phys. attach. M[b]		1.86	2.00	0.71		0.00	0.00	0.14	3.85+	2.56+

+p< .10; *p< .05; **p< .01; ***p< .001

TABLE 9B

DIFFERENCES IN CHILDREN'S SOCIAL BEHAVIOR RELATED TO STRANGER'S INTERACTIVE MODE[a]

C' Soc Behavior	Mean Scores			F[b]
	S talks	S plays	S talks &plays	
Looks	11.0	9.1	11.0	0.33
Vocalizes	10.6	6.3	8.0	3.50*
Pos. affect	4.0	4.1	3.9	0.09
plays	2.4	6.1	6.7	10.03***

[a]Assessed at home at 30 months

[b]Analysis of Variance: df= 2,13