DOCUMENT RESUME

ED 116 811 PS 008 295

AUTHOR Lenssen, Barbara G.
TITLE Infants' Reactions to Peer Strangers.
PUB DATE Apr 75
NOTE 19p.; Paper presented at the Biennial Meeting of the Society for Research in Child Development (Denver, Colorado, April 10-13, 1975). Not available in hard copy due to marginal reproducibility of original document

EDRS PRICE MF-$0.76 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS Emotional Response; Infant Behavior; *Infants; Mothers; Parent Child Relationship; *Peer Relationship; *Preschool Education; *Social Development; *Stranger Reactions

ABSTRACT

This study examined the reactions of 45, 10-month-old infants to peer strangers. The infants were observed in two conditions: with a stranger of the identical age (10 months) and with one who was younger (5 months). In additon, each infant's behavior when he was alone with his mother was compared to his behavior when he was in the presence of strangers. There were no significant differences between the infants' responses to the 5-month-old and 10-month-old strangers. However, in the presence of strangers, infants looked at their mothers less frequently and looked instead at the strangers; vocalized less frequently but did not fuss or cry more often; did not stay as close to their mothers but were less active; and smiled more frequently and sooner. Results indicate that infants are not necessarily fearful of strangers. They may, in fact, respond to strangers in a curious, friendly, and positive manner, particularly if the strangers are peers. (JMB)

INFANTS' REACTIONS TO PEER STRANGERS

Barbara G. Lenssen

The University of New Mexico Northern Branch

at Española

Four years ago at the SRCD meeting in Minneapolis, Harriet Rheingold and Carol Eckerman presented a paper entitled Fear of the Stranger: A Critical Examination. Their paper stimulated me to engage in the research which I shall describe this morning.

The concept that infants fear a stranger during the last half of the first year of life has been proposed as early as 1888 by Preyer and by many others since (Washburn, 1929, Spitz, 1950; Freedman, 1961; Schaffer & Emerson, 1964; and Tennes & Lampl, 1964). Recent data, however, have raised serious questions as to the nature and generality of the "stranger anxiety" concept and have noted positive sociable reactions by infants toward strangers (Morgan & Ricciuti, 1969; Ainsworth & Wittig, 1969; Rheingold & Eckerman, 1971; Brody & Axelrad, 1971; Bronson, 1972; Lewis & Brooks-Gunn, 1972). Just last year Rheingold and Eckerman (1974) published a thorough examination of the fear of stranger concept in which they seriously questioned its validity.

All previous studies with the exception of the Lewis & Brooks-Gunn 1972 paper have had one similarity: the stranger has been an adult. In the Lewis & Brooks-Gunn study the stranger was a 3 or 4 year old child. The present study re-examines the common assumption that 10-month infants fear strangers, but pays specific attention to the age of the stranger. The study asks: does an infant fear strangers when the strangers are infants like themselves?

Although there is a paucity of data available on early peer interactions, what does exist, such as Bridges (1932) and Maudry & Nekula (1939), suggests that positive responses are certainly as likely as fear responses. Furthermore, personal observations in public places such as restaurants and shops have frequently evinced positive reactions of infants to strange infants. Although his vocabulary may only consist of two or three words, "baby" is often one of the first words spoken by an infant. A frequent response upon sighting another infant involves pointing, smiling, and/or saying "baby". When an infant sees a picture of another infant, similar responses are often evoked. He seems to show a defininte preference for peers even though they are strangers.

The primary question of this study focuses on the infants' responses in the presence of strangers as compared with their

Read at the Annual Meetings of the Society for Research in Child Development, Denver, 1975.

responses when they are alone with their mothers. Do the infants when confronted with a peer stranger look away from the stranger and hide their faces in their mothers' laps? Do infants cling to their mothers in fear? Do infants cry at the sight of these particular strangers? Do the strangers inhibit exploratory movements? In short, does the concept "fear of strangers" adequately explain the behavior of a 10-month infant when confronted with a stranger who is approximately his own age? If it does not, then a modifier for the word stranger will need to be added to the concept. The study also asks whether infants will differentiate between a stranger who is of identical age (10 months) and one who is younger (5 months). The 10-month stranger is, of course, larger and is free to move in the environment, whereas the 5-month stranger is held in his mother's lap and will be expected to initiate fewer social interactions.

Subjects were 45 full-term male infants between 9.5 and 10.5 months and able to crawl.

Two identical, adjoining rooms at the Stanford Nursery School served as the experimental environment (Figure 1). A folding door separated the two rooms, which were unfurnished except for low beach chairs provided for the mothers. The floor of each room was marked into a 3 x 3 foot matrix. One-way windows and microphones provided visual and auditory access.

Subjects were observed in two conditions separated by a one-week interval. For 24 randomly selected infants, the first condition was "the 10-month stranger" in which the strangers were another 10-month infant and his mother while the second condition was "the 5-month stranger" in which the strangers were a 5-month infant and his mother. Twenty-one infants were observed in reverse order. Each condition consisted of an 18-minute observation period which was divided into two equal phases; in Phase 1 the subject and his mother were alone together; in Phase 2 the subject and his mother were in the presence of the strangers.

During the 10-month stranger condition, both 10-month infants were observed as subjects simultaneously. During the 5-month stranger condition all subjects encountered the same strangers, a mother and her infant son who was 4.5 months of age at the start of the research and 5.5 months at the end.

When a mother arrived with her infant for the first session, she was given a paper explaining the procedures step by step. The mother was requested to place her infant on the square directly in front of her chair, to remain in the chair provided and to refrain from talking. She could smile and respond to her infant, but was asked not to initiate interaction with him. On a prearranged signal the mother allowed her infant to roam freely and Phase 1 began.

At the conclusion of Phase 1, the experimenter entered the room, opened the moveable door separating the two rooms, and quickly departed. Thus in the combined rooms there were now two infants and

their mothers. As soon as the experimenter had left, the mothers retrieved their infants and again placed them on the originally specified square, to begin Phase 2.

The observers (four in the 10-month condition and two in the 5-month), prompted by an auditory device which clicked every 10 seconds, used the point-sampling method to record whom the subject was looking at and touching, the type of vocalization, whether the subject was smiling, and the square where the subject was located.

Interobserver reliability coefficients were computed for all scores. Reliabilities ranged from .68 to .99 with two-thirds of the scores having a reliability of .90 or greater.

Each subject's score for a given variable in Phase 1, when he was alone with his mother, was compared to his score for the same variable in Phase 2, when the strangers were present by use of Wilcoxon tests for each condition. To test for the differential effects due to the age of peer strangers, scores between the 5-month and 10-month conditions were compared.

Skewed distributions for most variables determined the use of non-parametric statistics and the presentation of medians and ranges in the tables. Frequency measures were transformed into percentages of time observed since the observational periods were not equivalent for all subjects.

Table 1 presents data for looks and touches. Regardless of the age of the strangers, infants looked at their own mothers about half as often in Phase 2 as they had in Phase 1. (Significance level $p<.01$). Nineteen infants (11 in the 10-month condition and 8 in the 5-month) spent more than 75 percent of the total time in Phase 2 staring at the strangers.

During the 10-month condition, infants touched their mothers a significantly greater percentage of the time in Phase 1 than in Phase 2 ($p<.01$). A similar but non-significant trend occurred in the 5-month condition. Six infants did not touch their mothers once throughout Phase 2 whereas all infants touched their mothers some portion of the time in Phase 1. Although the median number of physical contacts with the strangers was zero in both conditions, 21 infants in the 10-month condition and 11 in the 5-month did touch one of the strangers.

Infants displayed a marked propensity for looking at their mothers when alone with them and for looking at the strangers when they were present. The infants did not seek reassuring eye-to-eye contact with their mothers nor did they avoid gazing at the strangers as shown in Figure 2. Both types of behavior, according to Robson et al (1969) would have indicated fear of the strangers. Furthermore, there was no evidence of clinging, a response which connotes fear both in animals (Sluckin, 1965) and in human infants (Bronson, 1972). In fact, rather than seeking the reassurance of physical

contact with their mothers the infants tended to seek body contact with their mothers less often when the strangers were present.

Table 2 shows the sharp decrease ($p<.01$) in the amount of non-distress vocalizations from high levels recorded in Phase 1 to very low levels recorded in Phase 2. Six infants (three in each condition) who were silent throughout Phase 2, vocalized a mean of 47 percent during Phase 1. A striking effect of the strangers upon the infants may be seen in the increased latency to first vocalization following the onset of Phase 2 ($p<.01$).

Infants not only smiled more than twice as frequently in Phase 2 than in Phase 1 ($p<.01$), but also more quickly as shown by the latency to first smile ($p<.05$). The ranges for latencies to first vocalization and first smile extended from the lowest to highest limits, indicating that some infants vocalized and smiled almost immediately when they saw the strangers while other infants were silent and did not smile throughout Phase 2.

The high incidence of silence when the strangers were present was a surprising but not unexpected outcome. Morgan & Ricciuti (1969) and Bronson (1972) had previously documented this same phenomenon: frequent, protracted silence coupled with immobile inspections of the stranger's face. Silence does not necessarily imply fearfulness. Only if the protracted period of silence ends in crying can we deduce that the infant is fearful as documented in human studies (Tennes & Lampl, 1964; Schaffer, 1966; Robson et al, 1969) and in animal studies (Sluckin, 1965; Bronson, 1968). Congruent with the decrease in vocalizations during the stranger situation was the delay in vocalizing evident in Phase 2. There was a definite tendency for the infants to visually explore the strangers before responding vocally or motorically to their presence.

Smiling in 10-month-old infants can be assumed to denote the affective state of the infant as being one of pleasure and not of fear. Previous investigators such as Morgan & Ricciuti (1969) and Ainsworth & Wittig (1969) have interpreted incidents of infants smiling at strangers as indicative of friendliness toward the strangers. In this study the non-threatening behavior of both the strangers and the high interest value of the infant strangers might have had a good deal to do with the number of smiles elicited. Since smiles occurred more frequently and quickly when there were strangers present, the obvious conclusion is that the infants enjoyed the encounter with the strangers and indicated their pleasure by smiling at them.

Table 3 presents the variables constituting locomotor behavior. Infants strayed farther from their mothers in Phase 2 than in Phase 1 ($p<.01$). On the average an infant crawled almost a third farther from his mother while strangers were present than he did when alone with her. The two variables, number of lines crossed and number of squares entered, measured the infants' activity level. There was a nonsignificant trend for the subjects to cross

fewer lines and enter fewer different cells in Phase 2 than in Phase 1. Infants' latency to the first line crossed was greater in Phase 1 than Phase 2 ($p < .01$).

Figure 3 portrays the amount of time the subjects spent in each square. The infants explored almost the entire room, but spent most of the time close to their mothers in Phase 1. In Phase 2 infants' movements were directed toward the strangers. Twenty infants in the 10-month and 19 in the 5-month condition entered the strangers' room.

The delays in physical movement during Phase 2 should not be interpreted as expressing a freezing or fear reaction. Instead, we might describe the latency period as one of "watchful prudence" (Rheingold & Eckerman, 1971) in which the infant visually explores the strangers before he decides to approach them.

Figure 4 illustrates typical approach behavior. Infants almost always visually oriented toward the strangers as they physically approached them. The common mode of approach entailed an intermittent series of motor movement and visual regard. If infants were fearful in the presence of strangers, one would expect them to move toward or remain near a source of security, that is, mother (Bowlby, 1969). However, in this study the infants showed a tendency to move away from their mothers and toward the strangers.

In order to compare the attention getting quality of the infant stranger and his mother the number of touches and looks each received was compared. This comparison was possible only in the 10-month condition since the 5-month infant was so closely paired with his mother that observers could not differentiate subjects' responses to the mother/infant dyad. Table 4 shows that the infant stranger was a far greater attention getter than his mother. Subjects spent considerably more time looking ($p < .01$) at the infant stranger and touching him ($p < .01$) as compared to looking at or touching the other mother. The subjects also stayed in closer proximity to the infant stranger than to his mother ($p < .01$).

Whether the mode of orientation was merely visual or a more active form such as physical contact or locomotion, the infants showed a definite tendency to orient toward the strange infant rather than the mother. In fact, the mother was virtually ignored (Figure 5).

A major unexpected result of this study was the total lack of any significant differences between the responses to the 5-month and 10-month strangers. It is tempting to conclude that 10-month and 5-month strangers are equivalent stimuli for the 10-month old infant. However, this conclusion, based as it is on the impossible acceptance of the null hypothesis, should probably be considered only a very tentative suggestion. The particular 5-month stranger used in the study was relatively large and was not the immobile inactive creature expected. Rather he frequently waved his hands,

kicked his feet, smiled and vocalized. The fact that he was confined to his mother's lap did not, apparently, reduce his ability to elicit social responses.

In conclusion, responses measured gave no evidence of fear on the part of the 10-month-old subjects in the presence of these particular strangers. Instead the infants responded in a curious, friendly and positive manner toward the strangers. These results corroborate the observations of Rheingold & Eckerman (1971) that infants are not necessarily fearful of strangers but instead may respond positively.

REFERENCES

Ainsworth, M. D. S., and Wittig, B. A. Attachment and exploratory behavior of one-year-olds in a strange situation. In B. M. Foss (Ed.), Determinants of Infant Behavior, IV. London: Methuen, 1969.

Bowlby, J. Attachment and loss (Vol. I) attachment. London: Hogarth, 1969.

Bridges, K. M. B. A study of social development in early infancy. Child Development, 1933, 4, 36-49.

Brody, S., & Axelrad, S. Maternal stimulation and social responsiveness of infants. In H. R. Schaffer (Ed.), The origins of human social relations. New York: Academic Press, 1971.

Bronson, G. W. The development of fear in man and other animals. Child Development, 1968, 39, 409-431.

Bronson, G. W. Infants' reactions to unfamiliar persons and novel objects. Monographs of the Society for Research in Child Development, 1972, 37 (3 Serial No. 148).

Freedman, D. G. The infants' fear of strangers and the flight response. Journal of Child Psychology and Psychiatry, 1961, 2, 242-248.

Harlow, H. F., and Harlow, M. K. The affectional systems. In A. M. Schrier, H. F. Harlow, and F. Stollnitz (Eds.) Behavior of Nonhuman Primates (Vol. 2.) New York: Academic Press, 1965.

Lewis, M. and Brooks-Gunn, J. Self, Other, and Fear: The Reactions of Infants to People. (ETS RB 12-23) Princeton, N. J.: Educational Testing Service, 1972.

Maudry, M., and Nekula, M. Social relations between children of the same age during the first two years of life. Journal of Genetic Psychology, 1939, 54, 193-215.

Morgan, G. A. and Ricciuti, H. N. Infants' responses to strangers during the first year. In B. M. Foss (Ed.), Determinants of Infant Behavior, IV. London; Methuen, 1969.

Preyer, W. The mind of the child (Vol. 1). New York: Appleton 1888.

Rheingold, H. L., and Eckerman, C. O. Fear of the Stranger: a Critical Examination. Paper presented at the annual meeting of the Society for Research in Child Development, Minneapolis, April, 1971.

Rheingold, H. L., and Eckerman, C. O. Fear of the stranger: a critical examination. In H. Reese (Ed.), Advances in child development and behavior (Vol. 8). New York: Academic Press, 1974.

Robson, K. S., Pedersen, F. A., and Moss, H. A. Developmental observations of diadic gazing in relation to the fear of strangers and social approach behavior. Child Development, 1969, 40; 619-627.

Schaffer, H. R. The onset of fear of strangers and the incongruity hypothesis. Journal of Child Psychology and Psychiatry, 1966, 7, 95-106.

Schaffer, H. R., & Emerson, P. E. The development of social attachments in infancy. Monographs of the Society for Research in Child Development, 1964, 29 (3, Serial No. 94).

Sluckin, W. Imprinting and early learning. Chicago: Oldine, 1965.

Spitz, R. A. Anxiety in infancy: a study of its manifestations in the first year of life. International Journal of Psychoanalysis, 1950, 31, 138-143.

Tennes, H. L., and Lampl, E. E. Stranger and separation anxiety in infancy. Journal of Nervous and Mental Diseases, 1964, 139, 247-254.

Washburn, R. W. A study of the smiling and laughing of infants in the first year of life. Genetic Psychology Monographs, 1929, 6, 397-537.

Table I

Median Percentage of Looking and Touching as a Function of Presence and Age of Peer Strangers

Condition	Phase	Looks		Touches	
		Own Mother	Strangers	Own Mother	Strangers
10-month stranger	1	45 (12-82)*		67 (2-91)	
	2	20 (2-46)	64 (19-94)	42 (0-96)	0 (0-43)
5-month stranger	1	43 (14-83)		71 (3-100)	
	2	22 (0-49)	55 (24-98)	65 (0-100)	0 (0-87)

* Parentheses enclose ranges.

Table 2

Median Vocal Behavior and Smiling as a Function of Presence and Age of Peer Strangers

Condition	Phase	Vocalizations				Smiling	
		Non-distress	Silence	Distress	Latency to First Vocalization		Latency to First Smile
10-month stranger	1	50 (0-92)*	45 (8-97)	0 (0-40)	20 (10-420)	3 (0-33)	70 (10-540)
	2	17 (0-58)	76 (41-100)	0 (0-56)	70 (10-540)	10 (0-72)	30 (10-540)
5-month stranger	1	49 (12-79)	45 (17-83)	0 (0-56)	20 (10-220)	5 (0-37)	70 (10-540)
	2	21 (0-79)	74 (13-100)	0 (0-87)	50 (10-540)	10 (0-68)	50 (10-540)

Note. Numbers are median percentages except latencies which are in seconds.

* Parentheses enclose ranges.

Table 3

Median Locomotor Behavior as a Function of Presence and Age of Peer Strangers

Condition	Phase	Distance from Own Mother	No. of Lines Crossed	No. of Different Squares Entered	Latency to First Line Crossed
10-month stranger	1	5.4 (2.4-14.1)*	18 (1-80)	7 (2-15)	20 (10-200)
	2	6.7 (2.4-23.7)	14 (0-62)	7 (1-16)	30 (10-540)
5-month stranger	1	5.4 (2.3-12.4)	17 (0-104)	6 (1-15)	30 (10-540)
	2	7.1 (2.2-26.2)	7 (0-53)	4 (1-22)	30 (10-340)

Note. Distance is in feet and latency in seconds.

* Parentheses enclose ranges.

Table 4

Infants' Reactions to the 10-month Stranger and Other Mother

Variable	10-month Stranger	Other Mother
Looking[a]	71 (40-86)*	2 (0-13)
Touching[a]	8 (1-27)	0 (0-28)
Median distance in feet	23.6 (7.8-31.7)	28.1 (12.2-33.5)

[a]Numbers are median percentages.

* Parentheses enclose ranges.

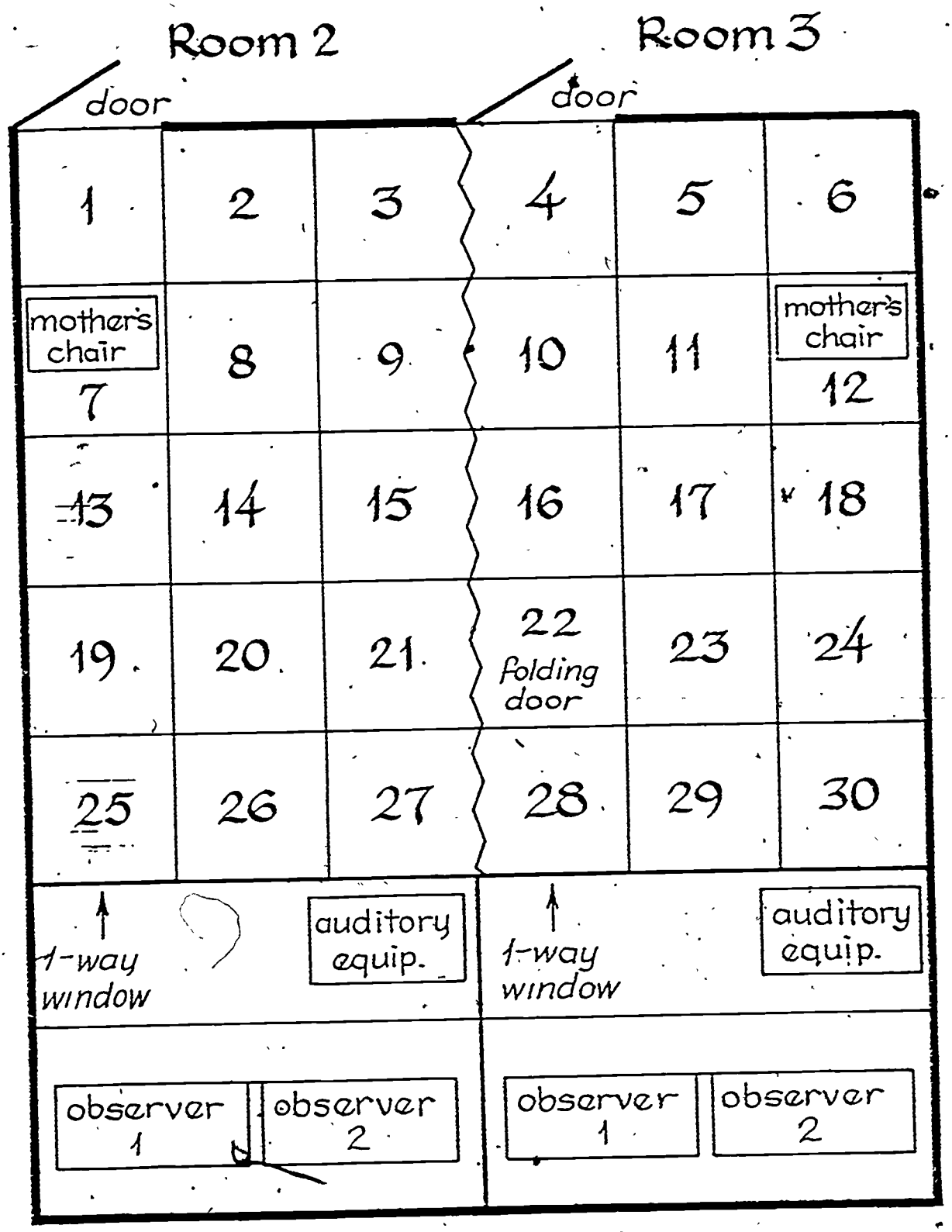
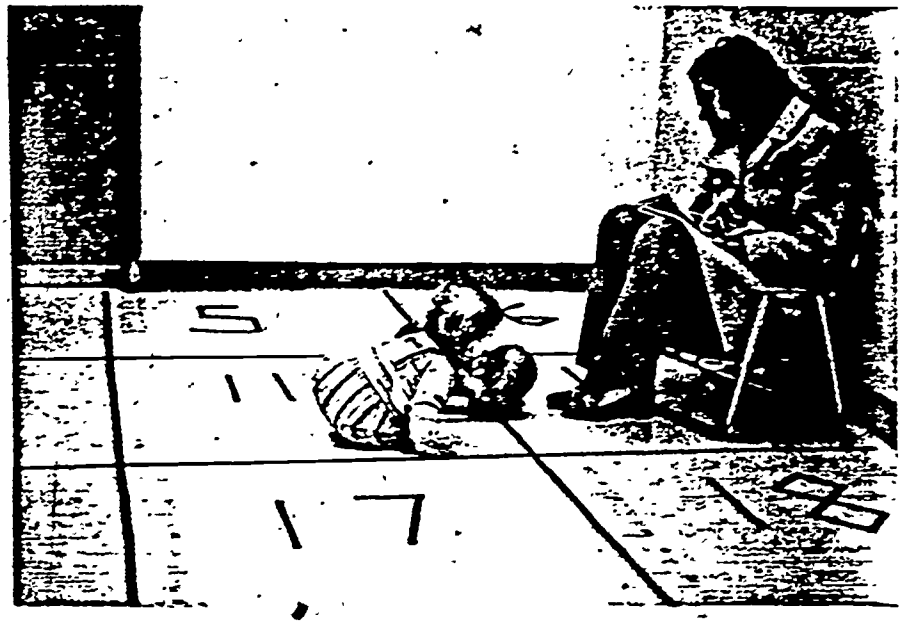


Figure 1. The experimental room.



10-month stranger

5-month stranger

Figure 2. Subjects looking at and touching other infants.

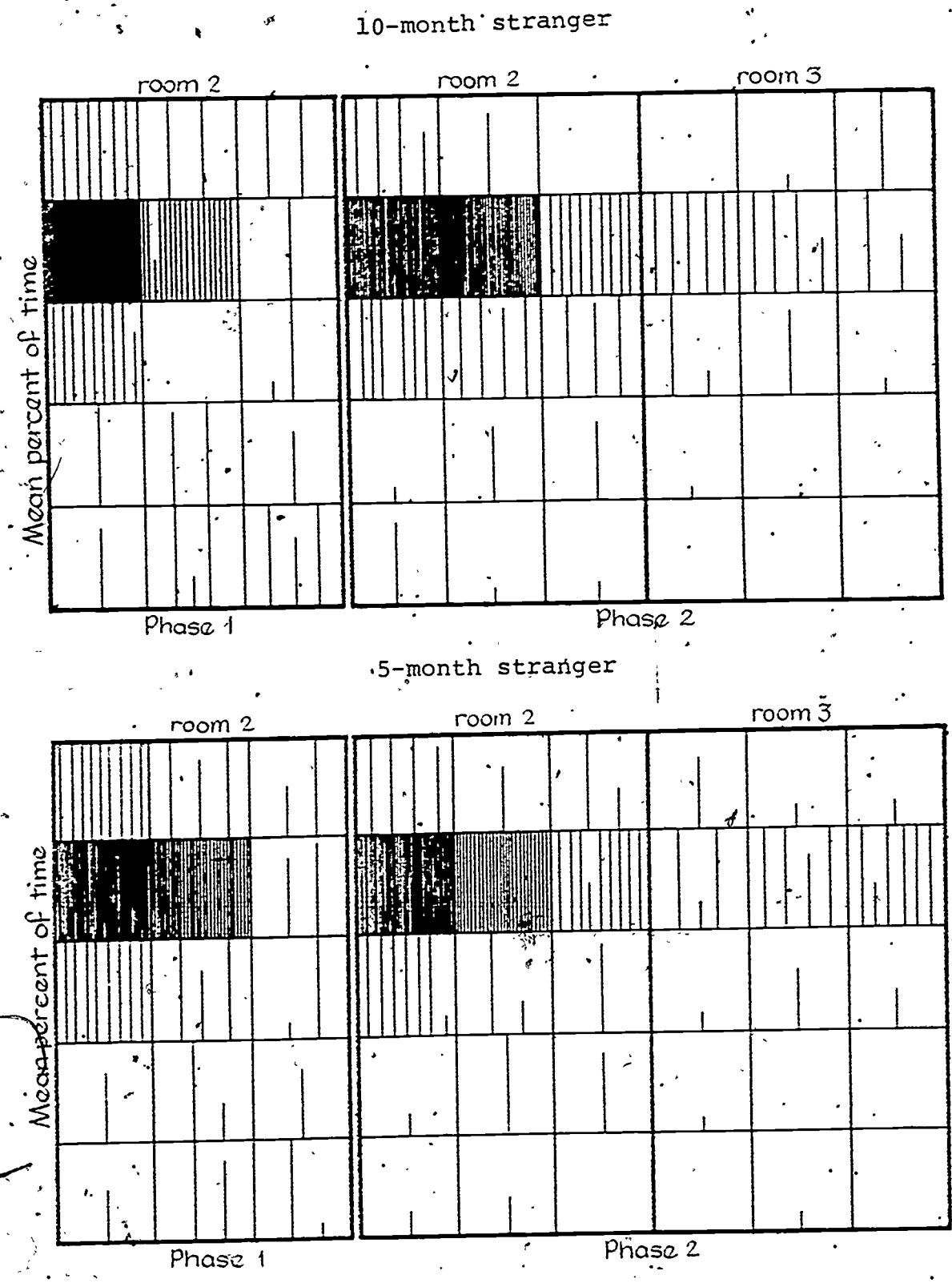


Figure 3. Mean percentage of time spent by infants in each square. Note: Each line within a square represents 1.0 percent of the total 540 second observation time.

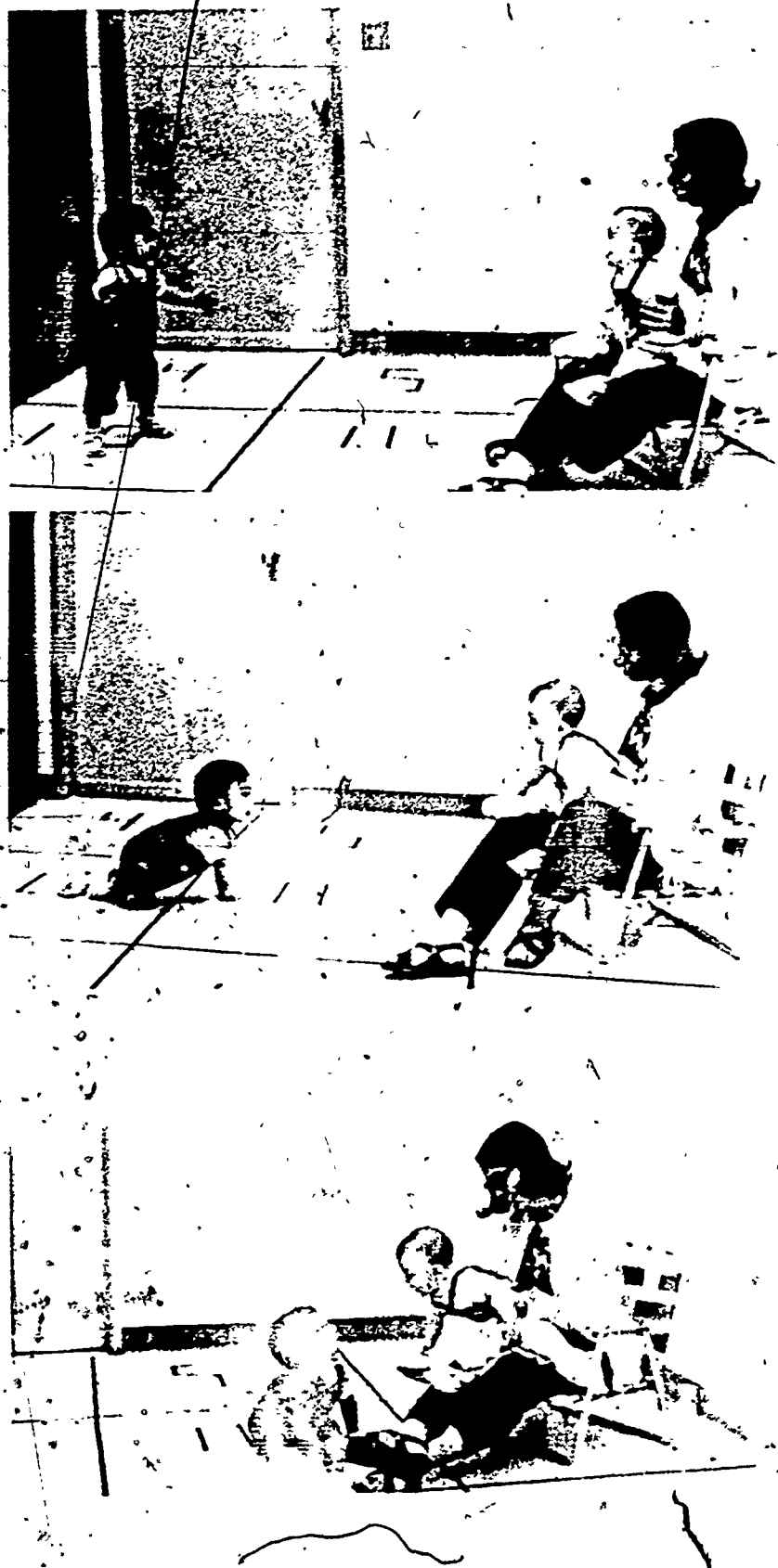


Figure 4. Typical approach behavior displayed by infants

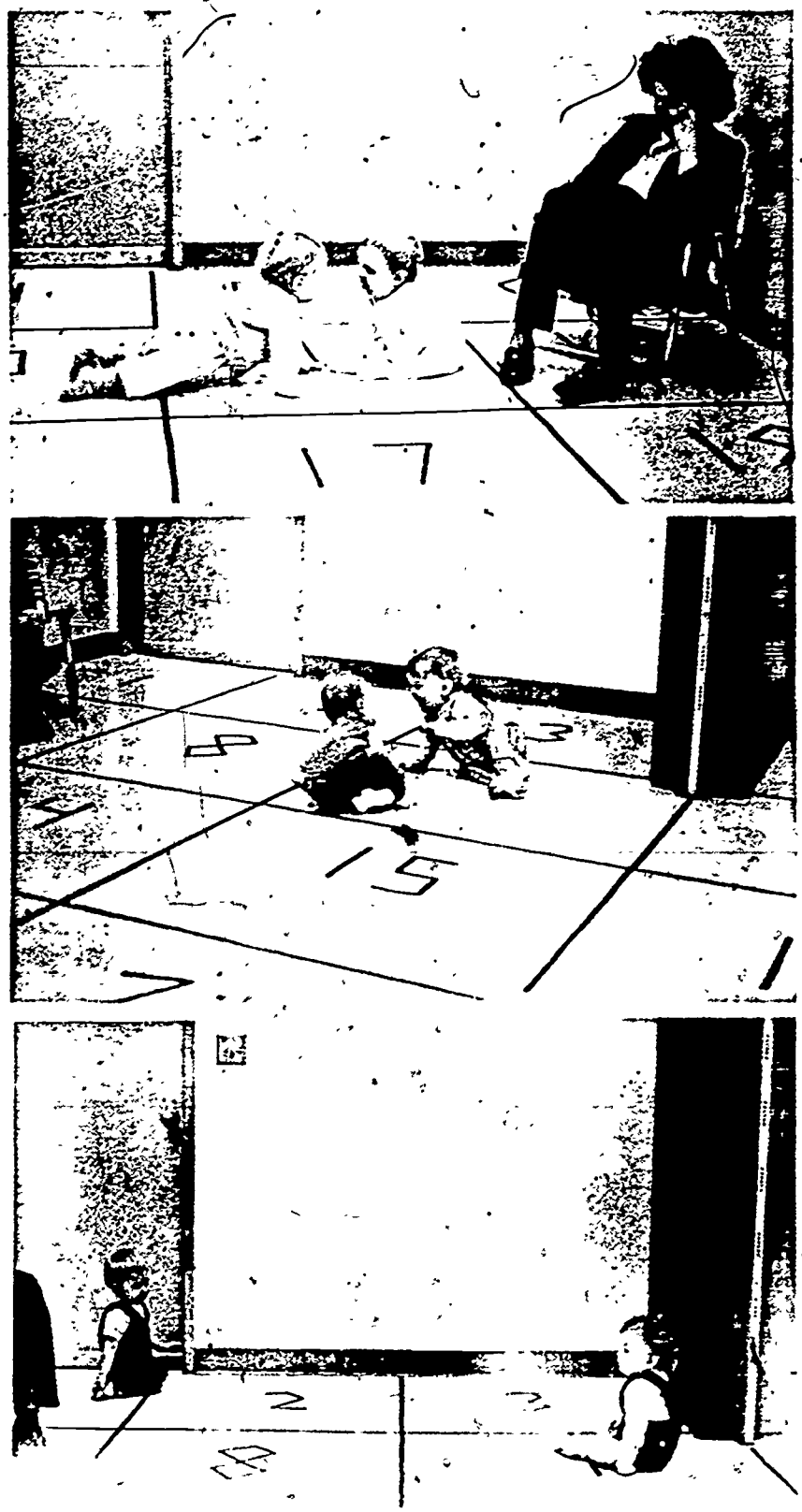


Figure 5. Infants orienting toward each other and ignoring the mothers.