

Separation and reunion behaviors as criteria of attachment to mothers and fathers

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SUMMARY

Twenty infants were observed 4 times between 7 and 13 months of age in a short-term longitudinal study. Responses to separations from and reunions with mothers and fathers are reported. None of the measures showed a preference for either parent at any age. Other studies confirm that even young infants are attached to both parents. It is argued that greater attention must be paid to the family's role in social and personality development.

parent—infant separations; reunions

INTRODUCTION

The study of social and personality development has excited the attention of social scientists for many years. Unfortunately, most investigators have attempted to characterize the mother—child relationship and determine its impact on the developing personality. More recently, I have argued that the traditional overemphasis on mothers obscures the facts that: the primary socializing medium in our society is the family, that fathers and siblings are salient aspects of the social environment, and that they may play an important role in personality development [11, 14]. Using separation and reunion criteria of attachment, the present study tested the proposition that both mothers and fathers are treated as attachment figures by young infants.

According to attachment theory [1–3, 5, 6], separation and reunion can be regarded as critical situations, representing, respectively, the departure and return of the infant's source of security. Stayton et al. [23] predict that, in response to separation and the fear that an attachment figure will

become inaccessible, infants will either cry in a bid to signal the attachment figure to return, or will follow the person. On reunion, they predict an enhanced display of attachment behaviors. Stayton et al.'s findings were remarkably congruent with these predictions. They found that separation protest occurred significantly more often in response to separations from mothers than in response to separation from unfamiliar persons. Protest, however, was never frequent, and was far less common than following, which was never differential to the mothers. Positive greeting responses, except smiling, were consistently differential to the mothers.

Though Stayton et al. did not compare mothers with fathers, their results are critically important in evaluating the results of the present study. Their study showed that separation protest and the different types of positive greeting are measures that differentiate between attachment and non-attachment figures. If these measures do not differentiate between mothers and fathers, it will indicate that both parents are serving as attachment figures.

In fact, several studies have found that separation protest does not occur more often in response to separations from either parent: neither in a structured home setting [20] nor in controlled laboratory settings [7, 9, 10, 20, 22]. Only Schaffer and Emerson [21] reported that 9-month-olds showed preferences for their mothers, but it is likely that their data collection technique (maternal reports) biased the results.

The present study is the first to use an observational technique to determine whether such preferences occur in response to naturally occurring separations and reunions. In addition, this study observed far younger infants than the previously cited studies.

METHOD

Subjects

The subjects were 10 male and 10 female infants, whose parents agreed to participate in a longitudinal study of infant social development. Subjects were recruited from the birth records of a local hospital by means of an introductory letter followed by a telephone call. Forty-six per cent of the families contacted agreed to participate, and were offered payment for their cooperation. The social status of the families was assessed by means of Hollingshead's [8] Two Factor Index of Social Position; the mean rating on this scale was 29.3. There were 3 boys and 3 girls in each of Classes I and IV, and two of each sex in each of Classes II and III. There were no infants from Class V families. All the subjects were white. Nine of the girls, but only 5 of the boys, were capable of independent locomotion when first observed. In all but one of the families, the mother was the primary caretaker.

Procedure

The infants were observed in their homes for between one and two hours when they were 7, 8, 12 and 13 months old. Each infant was observed for an average of 154 minutes in the early or younger series (7 and 8 months), while each was observed for an average of 199 minutes in the later or older series. Data from the two early visits and from the two later visits were combined for the purpose of analysis, in order to maximize stability. During the visits, the families were encouraged to behave as normally as possible, provided that both parents were in the same room as the infant most of the time. The infants' routines were not disrupted.

Each visit was made by the same two persons. One of these, referred to as the Visitor (*V*), attempted to interact with the parents and the child in the same manner as would any visitor to the home. Her purpose was to alleviate the parents' anxieties about being observed, and to offer the infant the choice between interaction with the parents, or with a responsive and participative stranger. The second person, the Observer (*O*), dictated into a tape recorder a detailed narrative account of the infant's behavior and the contingent behaviors of the other persons present. He also detailed the infant's response to attempts by the adults to initiate interaction. Since these behaviors and situations have been emphasized by previous researchers and theorists [e.g. refs. 3, 5, 6], *O* was instructed to focus particularly on the display of attachment behaviors, including the infant's response when either of the parents left the room during the visit, and the response when the parent(s) subsequently entered the room. While *O* was dictating, a timer was automatically marking on the tape the passage of each 15-second unit. The detailed accounts were subsequently transcribed by a typist, and the transcripts were thoroughly checked against the tapes for their accuracy before being analyzed.

Previous reports have dealt with the display of attachment and affiliative behaviors to the two parents and to the Visitor [13, 16, 17], and the reader is directed to these reports for a further discussion of the procedure. The present analysis deals only with the separations of the infants from, and their reunions with, their parents. Separations from the Visitor occurred too infrequently to permit analysis.

The coding was performed by two persons, who independently searched the transcripts for each instance of a parent entering or leaving the room. For each *separation* (leave-room episode) they noted:

- (a) who left the room;
- (b) who was left with the infant;
- (c) the infant's response, coded as 1: no response; 2: watches parent leave; 3: looks toward the parent remaining with him; 4: look to *V*; 5: approaches *V*; 6: approaches the remaining parent; 7: follows; 8: fusses or cries. Since the responses coded 3–6 were never reported, the analysis dealt only with those coded 1, 2, 7 or 8;
- (d) the number of 15-second units, or parts thereof, during which the parent was out of the room.

For each occasion on which a parent entered the room (*reunion*) the coders noted:

(a) who entered the room;

(b) who else was in the room;

(c) the infant's response to the person's entrance. To be coded as a greeting the behavior had to occur within 15 seconds of the parent's entrance. Greetings were categorized as 1: no greeting; 2: watches the parent enter without any other responses; 3: smiles or vocalizes; 4: approaches the parent; 5: requests to be picked up; 6: fusses. Fussing was infrequent, and since it was usually interpreted as a wish to be picked up, categories 5 and 6 were combined for the purpose of analysis;

(d) the parent's greeting of the infant. This was categorized as 1: no greeting or acknowledgement of the infant; 2: calls, vocalizes, or smiles to the infant; 3: picks up the infant, or offers to do so. No attempt was made to distinguish between those instances in which the infant was greeted by the parent first, and those instances where the infant greeted first.

Reliability

Reliability of the observations was assessed by recruiting an additional group of infants who were observed solely for the purpose of establishing observer reliability, as well as by arranging for additional visits to the homes of several of the infants in the study. On each of these 6 visits, the Observer and an assistant dictated parallel but independent accounts of the child's behavior, and its interaction with the parents and another female assistant who accompanied the observers. When the transcripts were coded as described above, agreement between the two observers was very high. Within each of the coding categories, reliability never fell below 90%. That is, in 90% (or more) of the instances that a behavior or response was mentioned by one observer, it was also recorded independently by the other.

Each of the transcripts was coded by one of two persons. Excluding the transcripts coded by both persons during training, 8 of the transcripts were coded by both coders. Inter-coder agreement was found to be highly satisfactory; it was typically above 95%, and always above 90% across all coding categories. One of the coders was unaware of the hypotheses being investigated, yet the results were the same whether based on the whole data base, or separately on the portions of the data coded by each person.

RESULTS

The results reported in this paper are based on a total of 669 brief separations occurring naturally during the course of the 4 visits. There were 366 separations from the mothers — 196 occurring during the first two visits and 170 during the next two. Of the 303 separations from fathers, 179 occurred when the infants were 7 or 8 months of age, and 124 when they

were 12 and 13 months old. Separations from the mothers averaged just under 1.5 minutes in duration, whereas those from the fathers averaged 2.7 minutes. The average duration of the separations from each parent were the same for the younger and older visit series. In the younger series, each infant had at least one separation from and reunion with each parent. With the exception of one infant who had no separation from his mother, the data base for the older series is similar in this respect.

All calculations are based on the percentage of its total number of opportunities that an infant displayed a specific response. Statistical comparisons were conducted using both dependent *t*-tests and the non-parametric Wilcoxon Matched Pairs Signed Ranks Test, as some of the distributions differed significantly from normality. The results were similar whichever test was used. Correlations were based on normally distributed scores, and are Pearson Product Moment Correlation Coefficients.

Separations

Younger series. On average, the infants did not notice, or made no observable response to, 69.2% of the separations from their mothers, and 56.9% of the separations from their fathers. They simply watched the parent leaving on an additional 36.0% of the separations from their fathers, and 15.3% of the separations from their mothers. Fussing or crying in response to the separations occurred in only 12.3% of the maternal separations, and 6.1% of the paternal separations (NS). Since 6 of the infants were not yet able to locomote, one would not expect following to occur frequently, and indeed it occurred on average in but 1% of the separations from the fathers, and 3.6% of the separations from the mothers (NS). Evidently, both following and protesting are extremely infrequent responses to brief separations in young infants observed in these conditions: these responses occur in only 16% of the separations from the mothers and 7% of the separations from the fathers (NS). Even if one considers only those 14 infants capable of locomotion, following occurs in response to but 5.4% of the maternal separations, and 1.4% of the paternal separations (NS). Only 4 of the 14 infants ever followed either parent. The mobile infants protested 14% of the maternal separations, and 2% of the paternal separations (NS).

Fifteen of the separations from the fathers and 22 of the separations from the mothers took place when the other parent was not present, and consequently the child was left with the two unfamiliar investigators. The infants protested in these circumstances in 3 of the instances of father separation ($n = 1$) and in 3 of the maternal separations ($n = 2$). In most of the separation episodes, the infant was left with another parent to provide security, and it is clear that when this was the case, separation seldom resulted in an intensification of attachment behavior directed towards the departing parent. In the absence of this security, though, infants do not appear to find brief separations in the home distressing either.

The probability that a child would protest or follow when its mother left was uncorrelated with the probability that it would respond thus when left by its father.

Older series. On average, the infants made no observable response to 43% of the maternal separations, and 45.5% of the paternal separations. To an additional 21.6% of the maternal, and 20.6% of the paternal separations, the infants merely watched the parent leaving. Following occurred as a response to 33.0% of the maternal, and 22.1% of the paternal, separations (NS) and overt protest to only 4.1% and 5.0% of the maternal and paternal separations respectively (NS).

Again, the intensity of the response did not differ when the parent left the child alone with the two investigators. In these circumstances, following and protesting occurred, respectively, in response to 37.5% and 5% of the 40 maternal separations, and 28.6% and 7.1% of the 14 paternal separations (NS).

The probability that a child would protest or follow when its mother left was not significantly correlated with the probability that it would protest when separated from its father.

Longitudinal developments. The probability that an infant would respond (fuss or follow) to separation from either parent was significantly greater in the older than in the younger series ($P < 0.01$ for fathers; $P < 0.05$ for mothers). This was accounted for by an increase in the probability of following both parents (both $P_s < 0.01$). Fussing was too infrequent at either age for any longitudinal trend to be discerned. The marked increase in the frequency of following is apparent even when only those infants who were capable of locomotion in the younger series were considered ($P < 0.01$).

It was not possible to predict, from knowledge concerning the probability of protesting or following either parent in the early series, whether that child would protest or follow when separated from either parent in the later series.

Summary. These results show that, in their response to brief separations in the home, these infants do not demonstrate a preference for either parent. This is congruent with other indications that separation protest (others did not record following) does not occur significantly more often following maternal than paternal separations, either at home or in the laboratory. In the only other longitudinal study, Stayton et al. [23] found that following was a more common response to maternal separations than protest, and became increasingly common as their subjects grew older. Though both responses occurred less often in the present sample, the same developmental trend can be discerned. Furthermore, these data show that this trend characterizes infant responses to paternal, as well as maternal, separations.

Greetings

Younger series. In an average of 52.9% of the reunions with the mothers, the infants made no response, and in an additional 31% they merely watched their mothers entering. Positive greetings occurred in only 16.1% of the reunions. Smiling or vocalizing occurred 9.5% of the time, approaching, 2.2%, and seeking to be picked up, 4.5%. In 40% of the reunions with their fathers, there was no observable response, and on an additional 32.6% the infants merely watched their fathers entering. Positive greetings occurred in 26.7% of the reunions: smiling or vocalizing occurred 22.5% of the time, approaching, 1.8%, and seeking to be picked up, 2.6%. Positive greetings were not directed significantly more frequently to either parent. Stayton et al. [23] reported that smiling, the commonest greeting, did not occur more often in greetings of mothers than of relative strangers, whereas vocalizing occurred far more frequently in reunions with the mothers. Neither behavior occurred more frequently in response to either parent in the present study.

Parents greeted their infants even less frequently. There was no acknowledgement of the infant in 87.5% of the entrances by the mothers, and 77.2% of the entrances by the fathers. There was a tendency ($P < 0.10$) for fathers to acknowledge their infants more frequently than mothers ($\bar{X}_f = 22.8\%$; $\bar{X}_m = 12.5\%$). Offers to pick up the infants were extremely infrequent, occurring in an average of 0.4% of the entrances by fathers, and 0.6% of the entrances by mothers.

It might be expected that the likelihood of an infant's greeting the parent is related to its experience of being greeted by the parent. In fact, the proportion of times that the parent acknowledged the infant was significantly correlated with the frequency of positive greetings by the infant ($r = 0.51$; $P < 0.02$ by one-tailed test for fathers; $r = 0.49$; $P < 0.025$ for mothers). Interestingly, the proportion of the time that infants greeted their fathers was significantly correlated ($r = 0.67$; $P < 0.01$ by two-tailed test) with the proportion of the time that their mothers greeted them, whereas the proportion of the entrances on which they greeted their mothers was uncorrelated with the proportion of the time that their fathers greeted them.

Older series. At 12 and 13 months of age, the infants made no observable response to 35.1% of the maternal separations, and 36.6% of the paternal (NS). On an additional 47.6% of the entrances by the mothers, and 44.1% of the entrances by the fathers (NS), the infants merely watched the parent entering.

Positive greeting occurred only 16.4% of the time in response to the mothers, and 18.4% in response to the fathers (NS). Smiling or vocalizing occurred about 9% of the time ($\bar{X}_m = 9.9\%$; $\bar{X}_f = 9.1\%$), approaching slightly less often ($\bar{X}_m = 2.9\%$; $\bar{X}_f = 6.4\%$), and requesting to be picked up even less frequently ($\bar{X}_m = 1.3\%$; $\bar{X}_f = 4.1\%$). None of the greeting responses occurred significantly more often in response to either parent.

Fathers greeted the infants, on the average, 27.3% of the time that they

entered the room, while mothers greeted the infants 17.8% of the time. There was again a tendency for the fathers to greet the infants more often ($P < 0.10$). At this age, too, the probability that an infant would greet a parent was correlated with the proportion of the time that the infant was greeted by that parent ($r = 0.57$; $P < 0.005$ for fathers by one-tailed test; $r = 0.42$; $P < 0.05$ for mothers). However, while the percentage of the time that the fathers greeted the babies was correlated with the percentage of the time that the babies greeted the mothers ($r = 0.54$; $P < 0.02$ by two-tailed test), the probability of maternal greeting was not correlated with the probability that the infants would greet their fathers.

Developmental trends. The frequency of greeting by both parents and the tendency of the babies to respond to reunions were not significantly different at the two time points. The percentage of the time that the babies greeted their fathers in the early series was significantly correlated with the percentage of the time that they greeted their fathers in the later series ($r = 0.64$; $P < 0.005$ by one-tailed test). The percentage of the time that the babies greeted their fathers in the early series was correlated with the percentage of time that the fathers greeted them later ($r = 0.49$; $P < 0.025$ by one-tailed test), but not the reverse. The frequency of maternal greeting in the early series was correlated with the frequency of the babies' greeting their fathers later ($r = 0.49$; $P < 0.05$ by two-tailed test), but not with the frequency with which they later greeted their mothers. Clearly, no developmental trends, and no causal relationships, can be inferred.

Summary. Stayton et al. [23] found that most greeting behaviors except smiling occurred significantly more often in instances of reunion with mothers than with an unfamiliar person, and they interpreted this as an indication of specific attachment. In the present study, none of the greeting behaviors showed a significant preference for either parent at either age, indicating that the infants were attached to both parents.

DISCUSSION

There are large differences between the frequencies of separation and greeting responses to mothers reported by Stayton et al. [23] and the frequencies found in the present study. Stayton et al. reported that separation protest occurred in response to 27.0% of the maternal separations in the third and 22.5% of those in the fourth quarter of the first year, whereas, for the comparable ages, the frequencies we found were 12.3% and 4.1%, respectively. Similarly, while they reported following to occur in the fourth quarter 49.0% of the time, we observed following in the later series with a frequency of 33.0%. They found that positive greetings occurred in response to 30.1% of the third-quarter and 33.8% of the fourth-quarter reunions with the mothers. The mothers, in turn, greeted their babies 31.4% of the time.

The comparable figures in the present study were 16.1%, 16.4% and 15.2%. There are two methodological differences which may account for the discrepancies, however.

First, the method of data collection employed in the present study is more detailed. Stayton et al.'s technique (handwritten notes written by a person filling both the Observer and Visitor roles) may result in an underrepresentation of brief separations to which there is no notable infant or maternal behavioral response. Second, the infants in the present study typically had fathers present when their mothers either left or returned to them. The presence of another attachment figure may reduce the stressfulness of a brief separation. Clearly, these discrepancies do not affect the usefulness of the present data for comparing responses to mothers and fathers.

As noted in the introduction, previous evidence suggested that separation protest and positive greeting should differentiate between attachment and non-attachment figures [cf. ref. 23]. The results of the present study clearly indicate that infants of 7–13 months of age treat both parents as attachment figures. These findings are important because other researchers have been unsuccessful in their attempts to use these measures in investigations of parental preferences among infants younger than 10–12 months [e.g. refs. 9, 10]. In the present study, we found that both older and younger infants showed no preference for either parent. The fact that 12- and 18-month-olds show preferences for their mothers under stress [e.g. refs. 12, 15] indicates that there is a hierarchy among attachment figures: there is ample evidence that infants form attachments to both parents from the time they are first able to form relationships [13, 17]. While the mother–infant relationship is clearly important, therefore, it behooves researchers to be cognizant of the multiplicity of significant relationships — even in infancy. Social and personality development is a far more complex process than simplistic dyadic models imply.

In the last few years, several theorists have attempted to indicate how mothers and fathers influence early social development [4, 18, 19]. Many have proposed that fathers may have their greatest impact on gender identity and sex role development, and that a secure father–infant relationship may offset the deleterious effects of insecure mother–infant relationships. Both of these notions still need further investigation. Also important is the realization that we need to consider not individual parent–infant relationships, but the network of parent–child and spousal relationships. The potential for both direct and indirect influences on infant development must be recognized [4]. It is generally agreed that the amount of interaction has less impact on the development of attachment than does the quality of that interaction. Fathers may spend little time interacting with their infants, but the interaction is intense and enjoyable, thus facilitating the development of father–infant attachments.

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