The Journal of Genetic Psychology, 1975, **126**, 255-262.

INFANT REACTION TO PARENTAL SEPARATIONS WHEN LEFT WITH FAMILIAR AND UNFAMILIAR ADULTS*

Harvard University

MILTON KOTELCHUCK, PHILIP R. ZELAZO, JEROME KAGAN, AND ELIZABETH SPELKE

SUMMARY

The results of two experiments examining infants at 6, 9, 12, 15, 18, and 21 months of age and varying levels of father interaction are summarized to show that separation protest is more a function of a strange person remaining in an unfamiliar laboratory situation with the infant than the temporary loss of a specific parent. The use of protest as an index of infant-parent attachment seems undesirable.

A. INTRODUCTION

It has been assumed that the infant's protest upon separation from the mother is a sign of his attachment—the hypothesized affective bond between mother and infant (1, 3, 9). Indeed, some have argued that the intensity of protest is a measure of the intensity of the attachment (12). This view of separation protest was based on parental reports, observations in uncontrolled natural settings, and laboratory experiments involving children of only a few ages (1, 12). The age range during which separation occurs, its intensity, frequency, and changing behavioral topography have not been explored systematically in a laboratory setting. More importantly, separation from the mother has been confounded with unfamiliarity of setting in most previous research (1, 4, 9). Thus, the use of separation protest as an index of the infant's affection for another person may be incorrect, for it is not clear whether the child was distressed over the departure of his mother or the strangeness of the total situation in which he remained.

Leaving the infant with the father (a familiar person) eliminates the total unfamiliarity of the laboratory situation and allows for an unconfounded assessment of the specific effect of maternal separation. Psychologists (10, 11) have only recently begun to observe the father's role in the child's early development. His effectiveness in abating separation distress, in particular, has not been systematically examined by direct observation.

* Received in the Editorial Office, Provincetown, Massachusetts, on December 21, 1973.

B. Experiment I

1. *Subjects*

The first experiment (7) explored the infant's behavior in an unfamiliar laboratory playroom during the presence and absence of the mother, father, and an unfamiliar woman at 6, 9, 12, 15, 18, and 21 months of age. The sample consisted of 144 infants; 12 boys and 12 girls were observed at each of the six ages. All infants were firstborn children of college educated parents.

2. *Method*

The infant was seated in the center of a large playroom (8 m $\times$ 7 m) surrounded by toys and facing his parents who were seated at one end of the room. The parents were instructed not to initiate interaction with the child, but to sit quietly and read. They were to respond naturally, but briefly, if the child approached them. Every three minutes one of the adults either entered or departed from the room. One of the two nonbalanced orders was used to determine which adult (*M*other, *F*ather, or *S*tranger) was to remain in the room with the child.

Order 1: MF, F, FS, S, SM, M, MF, M, MS, S, SF, F, FM.

Order 2: MF, M, MS, S, SF, F, MF, F, FS, S, SM, M, MF.

The design allowed for an examination of separation protest where departure of a specific person was not confounded with unfamiliarity of the situation. The child's play, crying, proximity to a person, touching a person, proximity, to the door, vocalizations, smiles, fixations, and interactions were coded throughout the 13 conditions. Interrater reliabilities for these measures ranged from $r = .82$ to .99.

An analysis of the two orders of departure revealed no effect. Moreover, a comparison of the adult alone conditions revealed no reliable difference between the first and second occurrence for each adult. Thus, all further analyses were performed on data pooled across similar episodes.

3. *Results*

The results indicate that children protest the departures of both parents but not the stranger. As Figure 1a reveals, boys and girls decrease play when both the mother and father leave the room, but increase play when the stranger departs ($F = 74.09$, $df = 2{,}240$, $p < .001$). This effect was curvilinear with age. Newman-Keuls procedures (14) for *a posteriori* testing reveal that 6 and 9 month old children did not reliably protest the departure of any person. The first statistically significant reaction to separation occurred

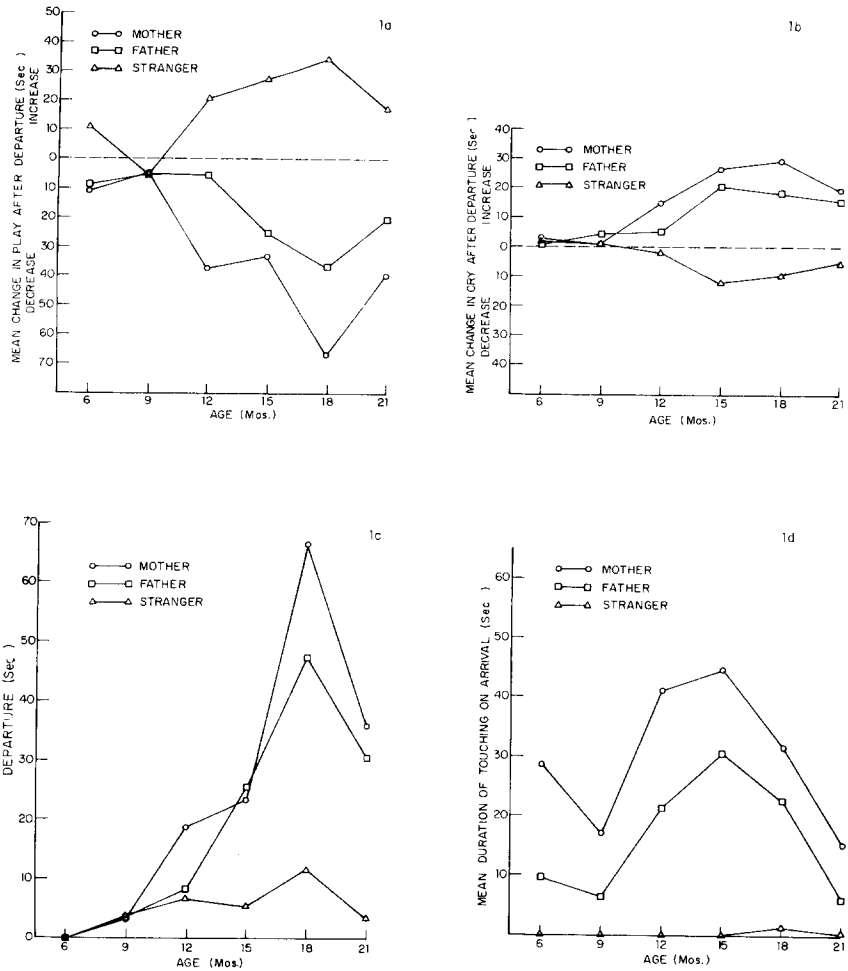

FIGURE 1

SEPARATION PROTEST AS A FUNCTION OF AGE OF INFANT

(*a*) Mean change in duration of play following departure of each adult (mean duration of play in episode preceding departure minus mean duration of play following departure). (*b*) Mean change in duration of crying following departure of each adult (mean duration of crying for episode preceding departure minus mean duration following departure). (*c*) Mean duration in proximity to the door following each adult departure. (*d*) Mean duration of touching each adult upon arrival into the playroom.

at 12 months; play diminished following the departures of the mother (12 > 9, 6 months, $p < .01$), and there was less play following the mother's departure than after the stranger's departure ($p < .01$). The departure of the father produced a reduction in play for the first time at 15 months (15 > 9 months, $p < .01$; Father < Stranger, $p < .05$). The disruption of play following parental departures was greatest at 18 months (18 > 6, 9, 12, 15 months; $p < .01$) and then lessened at 21 months (21 < 18, $p < .01$) revealing an abatement of separation distress. There were no sex differences in separation protest.

Other measures show a similar pattern. Figure 1b indicates that the infants cried extensively following parental departures ($F = 32.12$, $df = 2.40$, $p < .001$), but only starting reliably at 15 months. There was a marked increase in crying at 15 and 18 months for maternal departures (15, 18 > 6, 9 months, $p < .01$) and paternal departures (15, 18 > 6, 9 months, $p < .05$). Figure 1c shows that children spent more time at the door following the parents' departures than following the stranger's departures ($F = 35.17$, $df = 2, 240$, $p < .01$). Approaching the door commenced at 15 months, was maximum at 18 months, and declined somewhat at 21 months (18 > 15, 21, $p < .01$) for both parents. Figure 1d shows that upon reunion children would cling to their parents and avoid the stranger ($F = 52.71$, $df = 2,240$, $p < .001$). Clinging upon reunion was extensive at 12 and 15 months and then declined with age; by 21 months clinging to the parents ceased and was indistinguishable from clinging to the strangers.

Figures 1a through 1d seem to indicate a transformation in distress reactions upon separation from 12 to 21 months of age. Intense crying and clinging occur most at initial ages (12 and 15 months) of protest, whereas an overall lessening of distress, active pursuit, and more rapid recovery upon reunion characterize the later ages (18 and 21 months of age). Despite the decline in protest following parental departures at 21 months of age, other signs of the child-parent relationship not shown in Figure 1 remained either stable or became more extensive; for example, number of interactions, smile, and vocalizations to parents all increased steadily over age.

The results indicate that children display protest differentially depending on whether they are left with a familiar or unfamiliar person. Play was maximally suppressed when the child was left alone with the stranger (S < M, F; $F = 83.38$, $df = 2,240$, $p < .001$). When separation from a parent and total unfamiliarity of the environment are distinguished, the results indicate that unfamiliarity is the primary determinant of distress. For example, play is severely disrupted when the mother leaves the child with the stranger (Mean

$= 93.7$), but not when she leaves the child with the father (Mean $= 148.1$; $F = 89.40$, $df = 1/120$, $p < .001$). An analogous reaction occurs when the father departs (alone with stranger Mean $= 106.8$; alone with mother Mean $= 152.6$). Moreover, a comparison of the two stranger alone conditions shows high predictability for crying and playing (See Table 1). In

TABLE 1
SEPARATION PROTEST CORRELATIONS ACROSS CONDITIONS[a]

Age in months	Mother departure conditions	Father departure conditions	Stranger alone conditions
		Duration crying	
6	—.098	.076	—.100
9	.029	.097	.073
12	.248	.086	.556**
15	.116	.377	.876***
18	—.143	.049	.482*
21	.287	.094	.601**
		Duration playing	
6	—.094	.404	.134
9	.180	—.032	.628**
12	.069	.202	.525**
15	—.020	.341	.852***
18	.019	.112	.403
21	.265	.180	.750***

[a] Pearson product-moment correlation coefficients.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

contrast, there is no significant predictability either for the two mother departures (the infant is left once each with the father and stranger), or the two father departures. Separation protest, it appears, is not a valid measure of the child's concern for the "separated" parent.

Figures 1a through 1d reveal little support for the argument that the child's reaction to the mother is distinctively different from his reaction to the father during infancy. However, one area of noticeable difference between mothers and fathers concerns the age of onset of separation protest. Children protest maternal departure earlier than they do paternal departure; hence, at 12 months of age, children play less following maternal than paternal departures ($p < .05$). A *post hoc* analysis of parental caretaking factors indicates that children who protest at 12 months of age come from families in which fathers participate minimally in childcare.

C. Experiment II

1. *Subjects and Procedure*

A second experiment (13) attempted to clarify the role of father interaction during the early phase of separation protest. Three groups of 12 month old infants representing three levels of father-infant interaction (high, medium, and low) were selected with the use of intensive father and mother interviews. Level of father interaction was determined on the basis of time spent with the child, extent of caretaking, and reported sensitivity to the child's cues. Thirty-six firstborn children of highly educated parents were selected; six boys and six girls were chosen for each of the three father interaction groups. The laboratory procedures were identical to Experiment I except that only the first order of departures was used.

2. *Results*

In general, the results confirm the findings of the first experiment. The cryings following the mother's or father's two departures were minimally related, whereas the cryings during the two conditions where the stranger remained alone with the child were highly correlated ($r = .86$, $p < .001$). Moreover, there was no difference in protest following maternal or paternal departures.

The results from the second experiment also imply that separation distress is an inaccurate measure of an infant's attachment to his parents. Figure 2 shows that level of father interaction was inversely related to protest when left alone with the stranger ($F = 3.32$, $df = 4.60$, $p < .05$). The most distress occurred for low-father interaction infants, while the least occurred for high-father interaction children. Moreover, a similar analysis for father departures only revealed the same result. Infants receiving the least father interaction, who should be weakly attached, cried the most when left with the stranger, while infants receiving an intermediate level of interaction cried less ($t = 1.86$, $df = 22$, $p < .05$). Children receiving the most father interaction, who should be more strongly attached, cried the least (low *vs.* high interaction: $t = 2.28$, $df = 22$, $p < .025$). Moreover, infants cried as much when their fathers left them alone with the stranger as when their mothers did, even though mothers spent more time at home with their infants.

D. Discussion

The results of these two experiments challenge the presumed relation of separation protest to attachment. First, children in both studies respond differently to parental departures depending upon whether a familiar or unfamiliar person remains. Second, despite vast differences in caretaking, playing,

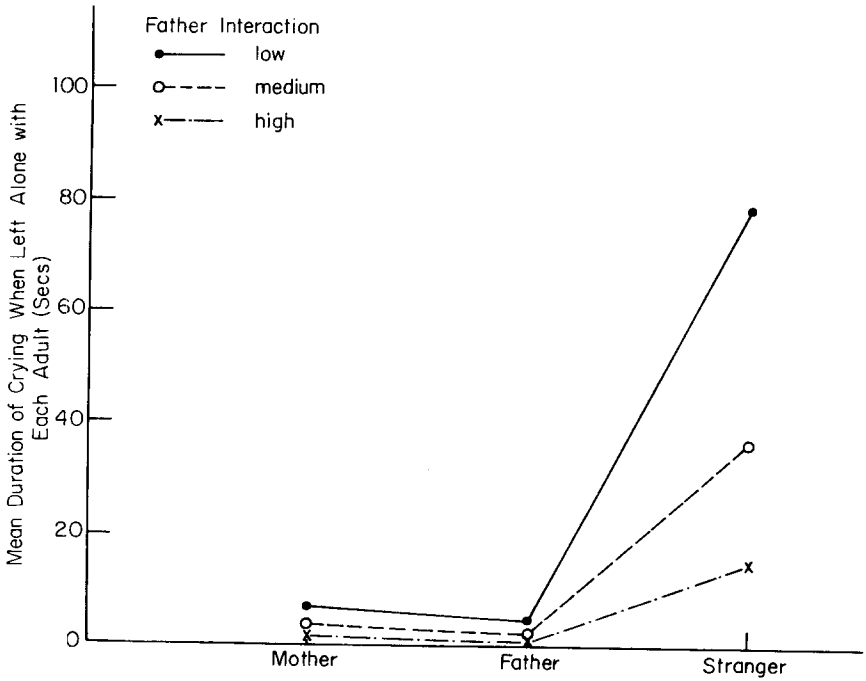

FIGURE 2
MEAN DURATION OF CRYING WHEN ALONE WITH EACH ADULT AS A FUNCTION OF LEVEL OF INTERACTION WITH FATHER

and availability, children protest to mother and father departures almost equally. Third, children protest parental departures most often for those fathers who interact with them least at home. These results confirm and extend Ainsworth and Wittig's suggestion that ". . . minor separations cannot be taken as the sole criterion of attachment" (2, p. 135).

The child's expression of protest may be more a function of his cognitive understanding of the departure situation than of his affective tie to the departed person. Perhaps separation protests should be viewed less as a sign of love, and more as an index of fear. Hebb (5), Kagan (6) and others have suggested that the infant's inability to assimilate or act upon a discrepant experience (such as being left in an unfamiliar situation in these experiments) can be distressing to the child. Littenberg, Tulkin, & Kagan (8), for example, have shown that the mother's departure from an unfamiliar exit in the home leads to more separation protest than departure from a familiar exit. Indeed, the transformation in protest over age in Experiment I implies that extreme distress over parental departures when left behind with a strange person is

a relatively immature reaction which diminishes by the end of the second year. Perhaps greater experiences with parental departures (assumed to accompany both increasing age and greater father interaction) may also influence the child's understanding of parental separations and elicit less fear and crying.

These results do not diminish the importance of separation protest which seems to be a significant phenomenon in its own right, nor need they challenge the concept of attachment which may be more accurately measured by positive approach behaviors such as smiling, vocalizing, and proximity in nonstressful situations. These results simply imply that separation protest is more an indication of the child's fear of the strange person in the unfamiliar laboratory room and less faithfully a reflection of his love for his parents.

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Department of Psychology and Social Relations
Harvard University
William James Hall
33 Kirkland Street
Cambridge, Massachusetts 02138