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ABSTRACT
 Extra post-partum mother-infant contact in the first hour of life does not appear to enhance maternal perceptions of infant temperament at 8 months. Subjects of a study of the effects of mother-infant contact on infant temperament were healthy, white, first-born infants and their mothers. Mothers were randomly assigned to an experimental group in which they received an additional hour of contact with their child or to a control group in which they received regularly scheduled contact. When infants were 8 months old mothers were requested to complete the Carey Temperament Questionnaire. This measure consists of 70 items descriptive of infant behavior in a variety of situations including feeding, response to caretaking, and interest in the environment. Behaviors are rated on 3-point scales to reflect nine temperamental characteristics such as rhythmicity, intensity, threshold, and persistence. At the time of the study, 56 mothers had completed the questionnaire. Infants were 15 extra contact males, 14 extra contact females, 15 regular contact males, and 12 regular contact females. Analysis of the data (2 by 2 ANCOVA) showed no main effects for the extra contact group. There were no significant sex by treatment interactions. Female infants were rated higher than males in threshold and intensity. In general, findings indicate that extra contact may have no systematic influence on maternal perceptions of the infant or that self-report instruments may be insensitive to the presumably subtle effects of early contact.
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**Early Contact and Maternal Perceptions
of Infant Temperament**

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Recent interest has focused on maternal perceptions of infant temperament and the relationship between these perceptions and the quality of mother-infant interaction. For example, it has been demonstrated that mothers who perceive their infants as difficult to care for engage them in less interaction and are less responsive to their infant's social bids (Campbell, 1977; Milliones, 1978). Furthermore, recent work by Broussard and Hartner (1970) suggests that negative maternal perceptions at one month are associated with poorer psychological adjustment in early and middle childhood.

Findings such as these may indicate that negative maternal perceptions reflect negative attitudes which are translated into less positive maternal behaviors independent of the infant's contribution; or negative maternal ratings of infant temperament may reflect the real frustrations of dealing with a difficult infant. It is also likely that negative perceptions result from an escalating cycle of mutually unrewarding interactions which are a product of both parent and child characteristics (Bell & Harper, 1977; Thomas, Chess, & Birch, 1968). Regardless of the direction of causality, it appears that early assessments of the ease or difficulty mothers experience in caring for their infants are associated with qualitative differences in interaction patterns throughout the first year.

Extra post-partum contact has also been hypothesized to influence the quality of early mother-infant interaction (Klaus and Kennell, 1976). Studies, to date, have demonstrated that extra contact is associated with increased frequency of several affectionate maternal behaviors and it has been suggested that early contact may facilitate the development of a positive attachment relationship. Seashore, Leifer,

Barnett, and Leiderman (1973) have found that extra contact between mothers and their premature infants in the first weeks of life enhances maternal feelings of confidence in the ability to fulfill the caretaking role. Taken together, then, these strands of evidence suggested to us that extra, immediate post-partum contact might be associated with more positive maternal assessments of infant behavior at eight months.

Infant temperamental characteristics seemed worthy of study in this context. Thomas and his associates (Thomas et al., 1968) have suggested that particular infant temperamental characteristics, notably positive mood, regularity in biological functioning, adaptability to changes in routine, and mild rather than intense reactions to sensory stimuli typify the "easy" infant. Conversely, the "difficult" infant is characterized as predominantly negative in mood, irregular, non-adaptable, and intense. A questionnaire designed to obtain maternal ratings of these characteristics has been developed by Carey (1972).

It was hypothesized that mothers who had received extra, early post-partum contact with their infants in the first hour after delivery would rate their infants in a more positive direction at eight months than would regular contact control mothers. Specifically, extra contact mothers were expected to rate their infants as more positive in mood, more regular, less intense, and more adaptable. Extra contact infants were also expected to be rated as more willing to approach new situations and people, lower in threshold, and higher in soothability (distractibility). No specific predictions were made regarding the remaining two scales, activity and persistence, since their positive or negative valence seemed less clear.

Method

As described in the previous paper (Taylor et al., 1979) subjects consisted of healthy, white, first-born infants and their mothers. Infants were delivered vaginally after 36 weeks gestation. Pairs were randomly assigned to receive an hour of extra contact in privacy in the recovery room approximately 30 minutes after delivery or to serve as a regular contact control.

At eight months mothers were requested to complete the Carey Temperament Questionnaire (Carey, 1972). This measure consists of 70 items descriptive of infant behavior in a variety of situations including feeding, sleeping, response to caretaking, social interaction, and interest in the environment. Behaviors are rated on 3-point scales to reflect the nine temperamental characteristics identified by Thomas et al. (1968): activity, rhythmicity, adaptability, mood, approach, intensity, threshold, distractibility, and persistence.

Questionnaires were mailed with a stamped, addressed envelope and a cover letter one week before the infant's eight month birthday. Mothers are, of course, aware that they will be required to complete a number of measures throughout the course of the study.

To date, 56 mothers have completed the Carey Infant Temperament Questionnaire and returned it within two weeks of their infant's eight month birthday. Break down by sex and study group assignment is as follows: 15 extra contact males, 14 extra contact females, 15 regular contact males, 12 regular contact females.

Results

Data were analyzed using a 2 X 2 ANOVA to assess the main effects

of sex and contact group on maternal ratings on the nine temperament scales. There were no main effects for contact group. Female infants were rated as higher in threshold than males ($F(1, 52) = 8.49, p < .01$) with a tendency toward ratings of higher intensity ($F(1, 52) = 3.87, p = .06$). No other sex differences reliably differentiated the groups. There were no significant sex by treatment interactions. These findings are summarized in Table 1.

In addition, infants rated above the sample mean as irregular, non-adaptable, and negative in mood were classified as "difficult" ($N = 15$), while those rated below the sample mean as regular, adaptable, and positive in mood were classified as "easy" ($N = 16$). The remaining 25 infants were considered "intermediate" after Thomas et al. (1968). There was virtually no association between temperament classification and contact group ($\chi^2 < 1$). Maternal perceptions on the Neonatal Perception Inventory at one month were likewise unrelated to maternal ratings of temperament at eight months.

Discussion

Contrary to the hypothesis, extra post-partum mother-infant contact in the first hour of life does not appear to enhance maternal perceptions of infant temperament at eight months. Ratings of infant temperamental characteristics appear to be influenced by mothers' experiences with their infants and to change over time. At eight months, mothers' perceptions of their infants vary as a function of factors other than the extra contact experience. These data are consistent with the maternal ratings obtained on the Neonatal Perception Inventory at one month, as reported in the previous paper (Taylor et al., 1979). Thus, extra contact may have no systematic influence

on maternal perceptions of the infant or self-report instruments
may be insensitive to the presumably subtle effects of early contact.

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Table 1
Means and Standard Deviations of Maternal Ratings
of Infant Temperament at Eight Months by
Sex and Contact Group

Scale	Regular Males N = 15	Regular Females N = 14	Extra Males N = 15	Extra Females N = 12
Activity	1.57 (.24)	1.64 (.13)	1.60 (.24)	1.60 (.29)
Irregularity	.47 (.34)	.30 (.27)	.49 (.50)	.64 (.44)
Non-Adaptability	.32 (.22)	.37 (.16)	.42 (.35)	.26 (.24)
Approach	1.55 (.26)	1.45 (.35)	1.57 (.35)	1.63 (.49)
Threshold	.88 (.32)	1.21 (.27)	.97 (.28)	1.12 (.45)
Intensity	.94 (.31)	1.12 (.21)	.91 (.29)	.99 (.17)
Negative Mood	.45 (.18)	.43 (.20)	.41 (.25)	.47 (.28)
Distractibility	1.45 (.38)	1.41 (.31)	1.36 (.32)	1.33 (.34)
Persistence	1.28 (.24)	1.35 (.30)	1.12 (.32)	1.19 (.41)