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ABSTRACT

This study investigates three types of reciprocal interactions among members of the family unit (father, mother and infant): father-infant interaction affecting child's development, father-infant interaction affecting mother's behavior, and husband-wife interaction affecting mother's behavior. Data from a sample of 39 healthy first-born infants (20 male and 19 female) and their white, middle-class parents were collected independently in several ways: (1) infants, 3 days old, were examined in the hospital nursery and evaluated on alterness, motor maturity, and irritability; (2) ratings were made of the quality of the mother-infant relationship in connection with two time-sampling home observations when the infants were 4 weeks old; and (3) fathers were interviewed by a male psychiatrist when the infants were 4-5 weeks old. The network of significant correlations found for male infants is illustrated with a diagram and discussed. No significant correlations were found for female infants. (Author/ED)

Mother, Father, and Infant as an Interactive System[1]

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Mother, Father, and Infant as an Interactive System

Frank A. Pedersen

Recent research on fathers and infants represents a healthy recognition that the sum total of the infant's early environmental experience is not simply limited to the infant's relationship with his mother. On the other hand, if this new research emphasis concentrates solely on the father-infant relationship without regard for the mother-infant unit, then it will be as shortsighted as the past emphasis upon mother and infant alone. The idea that I want to stress in this paper is that the family unit of mother, father and infant represents an interactive network, and each family member influences and is influenced by the other members. Our particular vantage point will be the father because there is a dearth of conceptualization regarding the father in the infancy period, but similar ideas may be developed from the vantage point of the mother or infant.

My basic thesis is that mother-infant interaction does not occur in a psychological vacuum, even though most research appears to assume that it does. Within the American middle-class nuclear family, the father is a potent psychological force whose behavior affects (and if affected by) both mother and infant. This occurs in two ways: by the father's relationship with the infant and his relationship with the mother.

His interaction with the infant may have important consequences for development. One of the stereotypes in our culture is that fathers often engage in frolicsome "horse-play" with babies. A father may vigorously bounce an infant and lift him overhead. It is common to see infants respond with peals of laughter and occasionally a twinge of apprehensiveness. Insofar as the father provides these kinds of experiences, we might hypothesize that the infant might become more receptive to activities involving rapid

rates of stimulus change. The infant might develop an expectancy for such experiences from his father, and the father whose child enjoys this type of play would be reinforced for his involvement and is likely to provide more of these experiences.

It is also likely that the father's relationship with the infant has consequences for the mother as well. How the father interacts--or does not interact--with the infant may affect the experiences the mother provides for the infant. In other words, the father's influence may be mediated through the mother; in the termonology of Bronfenbrenner, this is a 2nd order effect. The father's involvement in caregiving activities may provide a respite which is supportive to the mother. There also can be subtle or very direct transmission of his feelings about the infant and his child-rearing values. If the father feels positively towards the infant, it is likely that the mother's positive feelings and behaviors may be enhanced. If the father is impatient with babies and short-tempered about their fussing, perhaps this can have an unsettling effect on the mother; she may feel the need to buffer or compensate for the father's negative feelings.

The father may affect the mother in a second way. The husband-wife relationship may influence the quality of the mother's behavior with the infant. A warm, affectionate husband-wife relationship may support the mother by meeting her dependency needs, and she may then find it easier to express nurturant behavior towards the child. On the other hand, if the husband-wife relationship is characterized by tension and conflict, the mother's needs for intimacy will be thwarted and she may be very reactive to the affectional needs of her baby. She may develop a very close relationship with the infant as compensation for what is lacking in the relationship with her husband, or she may show negative affect or hostility, especially towards

a male infant whom she may identify with the father.

The bidirectional nature of these relationships should be underscored. An infant's special sensitivities and responsiveness to certain types of stimulation may "turn on" either parent in very selective ways. A "difficult baby," that is, one who is particularly fussy or irritable, may be a trying experience for both parents, and a variety of conflicts and disagreements may arise between the parents over what is the most appropriate way of handling the infant. Similarly the father's behavior with the infant is also mediated by the mother; her behavior and feelings towards the infant and their relationship with each other influence his affect towards and handling of the child.

Having sketched out these complex sets of bidirectional relationships, I want to present some selected data which bear on whether these ideas are just a figment of my imagination.

The data come from a sample of 39 first-born infants (20 male and 19 female) and their parents, participants in an investigation carried out in the Social and Behavioral Sciences Branch of the NICHD. Dr. Leon Yarrow, Dr. Kay Standley and several other staff members, including myself, collaborated in the overall design and data collection. All families were white and middle class, recruited through the National Naval Medical Center in Bethesda and private obstetricians. Only normal infants, free of complications of pregnancy, labor and delivery were included. Almost half of the sample has attended Lamaze classes in natural childbirth.

For the analyses which I will report, there were three sources of data:

1. At 3 days the infants were examined in the hospital nursery with the Brazelton Neonatal Assessment Scales. Through factor analysis and conceptual considerations, a number of items were combined into three clusters. These

clusters, which accounted for 13 items of the Brazelton Scales, were Alertness, Motor Maturity and Irritability.

2. Ratings were made of the quality of the mother-infant relationship in connection with two time-sampling home observations when the infants were four weeks old. Among these seven variables, each of which was a five-point rating scale summed for the two observations, one was selected out because of its pivotal relationships with other sets of data. That rating was Feeding Competence, and refers to the appropriateness of the mother in managing feeding. Mothers rated high are able to pace the feeding well, intersperse feeding and burping without disrupting the baby, and seem sensitive to the baby's needs for either stimulation of feeding or brief rest periods during the course of feedings. Each hour long observation included a feeding, and since the babies were only 4 weeks old, that event tended to dominate the observation.

3. The third source of data was an interview with the father, conducted by a male psychiatrist, Dr. David Schachter, at the NIH when the infant was from four to five weeks old. For these analyses, two areas were of particular interest: the father's report of his relationship with the infant, and his description of the husband-wife relationship. The father described how much he played with his baby, whether and how often he engaged in caregiving activities such as feeding and changing diapers, and he described his affective reactions to his baby. He also described his relationship with his wife, whether he felt supportive toward her and evaluated her maternal behavior in positive terms, and whether there was an appreciable amount of tension, conflict and disagreement in their marital relationship. There were five ratings that entered into these analyses and each variable summarized responses to several questions in the respective areas.

There was absolute methodological independence in these three sets of measures. Staff members involved with one set had no knowledge of either of the other two. Moreover, there was total situational independence in the data collection. The fathers were not present when the mothers were observed; mothers were not present during the father interview and neither parent observed the Brazelton. Relationships among the three sets implies that measures are tapping into fairly enduring qualities rather than simple situational factors. Without taking time for details, let me also assure you that all measures met the necessary technical requirements for reliability.

The handout reports the network, of correlations for male infants. Each arrow represents a significant correlation. The absence of an arrow between two variables in different sets means that correlation was not significant. Before I conduct you around this table, I want to make an initial caveat. With the new Zeitgeist, there is a strong temptation to view correlations between neonatal characteristics and parental behavior as an "infant effect." From what we know of the larger investigation, this view would be simplistic. As Dr. Kay Standley has reported elsewhere, (Standley, Soule, Copans & Duchowny, 1974) the Brazelton variables were related to maternal medication. Medication during delivery is not a random event, but relates to the mother's personality and whether the parents participated in a childbirth preparation group. The latter has implications for the husband-wife relationship during the pregnancy and the delivery itself. It is likely that these correlations represent an ongoing process of reciprocal feedback among all three family members, a portion of which was underway before the birth of the baby.

First of all, we see that Alertness and Motor Maturity of the infant relate to the marital relationship. With an alert baby, the father evaluated the mother more positively; with a motorically mature baby, there appeared

to be less tension and conflict in the marriage. Stated more boldly, a good baby and a good marriage go together. These relationships extend the anecdotal finding of Leifer and her collegues (Leifer, Leiderman, Barnett & Williams, 1972) into the normal range of infant characteristics and marital disharmony. They found that in families where there was a premature infant, many of whom were presumably at risk for neurological damage, there was a disproportunate number of divorces in the follow-up period compared to the full term control group. We see that normal variation in the infant was associated with the marital relationship in intact families.

The husband-wife relationship was also linked to the mother-infant unit. When the father was more supportive of the mother, that is, evaluated her maternal skills more positively, she was more effective in feeding the baby. Then again, maybe competent mothers elicit more positive evaluations from their husbands. The reverse holds for marital discord. High tension and conflict in the marriage was associated with more inept feeding on the part of the mother. The mother's feeding skill is also clearly linked to the alertness and motor maturity of the infant, so the overall picture is that of a circular system of reciprocal feedback. Of course, with correlational data, one cannot enter the system at any point and assign an ultimate causative effect to a particular variable.

Irritability of the baby shows a different network of connections. Fathers played more with irritable babies, perhaps to distract them in their fussy periods. Play at age four weeks is really attentiveness in other than caregiving activities. The fathers were, however, rather reactive in a negative way to the baby's irritability; with higher infant irritability, fathers tended to show more negative affect. The mother's feeding skill was unrelated to how irritable her son was, but there appeared to be an

indirect effect of the baby's irritability through the father. When the father described that he felt more negative affect toward the baby, the mother appeared to have more difficulty in feeding. Perhaps she was projecting feelings about her husband into her relationship with her son and was more anxious and uncertain as a consequence. At any rate, the mother's feeding behavior is operating in anything but a psychological vacuum: it is systematically related to her relationship with her husband and how he relates to their son, and how both parents are tied into the qualities of the infant.

Now, what about female infants? There were no significant differences between boys and girls in the means for any of the parental or infant measures, but there was no functional relationship among these sets. Not one of these 10 correlations was significant for female infants. That seems devastating to a theory of the family as an interactive system, but explanations, like hope, spring eternal. The parents were asked in interviews during the pregnancy whether they wanted a boy or a girl. Uniformly, every family that expressed a preference wanted a boy! This network of correlations, in the male group, is the early adaptation of parents who had their wishes fulfilled. I think that might make the system a little tighter. Perhaps there is more disequilibrium in the first few weeks with a female infant as the parents adjust to their unconfirmed wishes. When I first looked at the data without including the Brazelton Clusters, I thought that the mother-daughter relationship might be a closer unit which is more insulated from or independent of the father. That made a certain degree of sense, but it became apparent that, in the case of female infants, not only was the mother's behavior not associated with the father variables, but it was not related to the Brazelton variables either. The unconnectedness of the system appears

rather general. I hypothesize that this is a phenomena of the early adaptation period and that linkages of the type we saw with the male infants would begin to emerge fairly soon.

While the idea of the family as an interactive system is intuitively appealing, there is obviously need for much more research to document the networks of influence and how the issues may change at different developmental periods. For example, as the child matures and his response repertoire increases, many fathers may spend more time interacting with their babies; but the complexity of interaction may also increase as the infant's exploratory motive develops and issues of control and limit setting enter the picture. This often becomes an important issue between parents. Because of the variety of problems which may be important in different families, research of this nature is fraught with difficulties. It is important to deal with the idiosyncratic match among the qualities of each family member. It is wrong to think that high involvement of the father with the infant is uniformly a desirable quality in all families. In some families, the father's relationship with his infant may actually be threatening to the mother, either because of her insecurity about her maternal skills or the competitive posture with which the father expresses his interest in the infant. In other families the mother may genuinely welcome the father's interest in the infant but she may find that their values and philosophies of child care are radically different and become a source of intense conflict.

Since how well a family functions is partly determined by the idiosyncratic match among the three family members, it is very difficult to develop variables which generalize across families. Variables which differentiate families meaningfully are likely to be rather abstract just so they can transcend the concrete issues of a particular family. The more

abstract a concept is, of course, the harder it is to tie it to specific behavioral referents. The heart of the problem is that we must have concepts which characterize dyads or three-person units, while so much of psychology deals with individual behavior.

There is a final implication that bears mentioning. Much developmental research has focused on finding antecedent-consequent relations while considering basically a dyadic unit, usually mother and child but more recently, father and child. When it is clear that a third person is psychologically a part of the family unit, it seems to me that such outcome-oriented research is vastly more difficult. Statistical relationships between two individuals may be mediated or masked in some indeterminate way by the third. Even in an experimental intervention, with families randomly assigned to different treatment conditions, changing the behavior of one parent may inadvertently alter the behavior of the other in a way that confuses or confounds the effects of the experimental manipulation. In my own thinking I have reached the conclusion that we should temporarily suspend outcome-oriented studies and concentrate our research resources on understanding the process of family interaction with young infants. Only when we know more about the networks of reciprocal interactions can we approach the problem of antecedent-consequent relations with enough understanding to do justice to the task.

References

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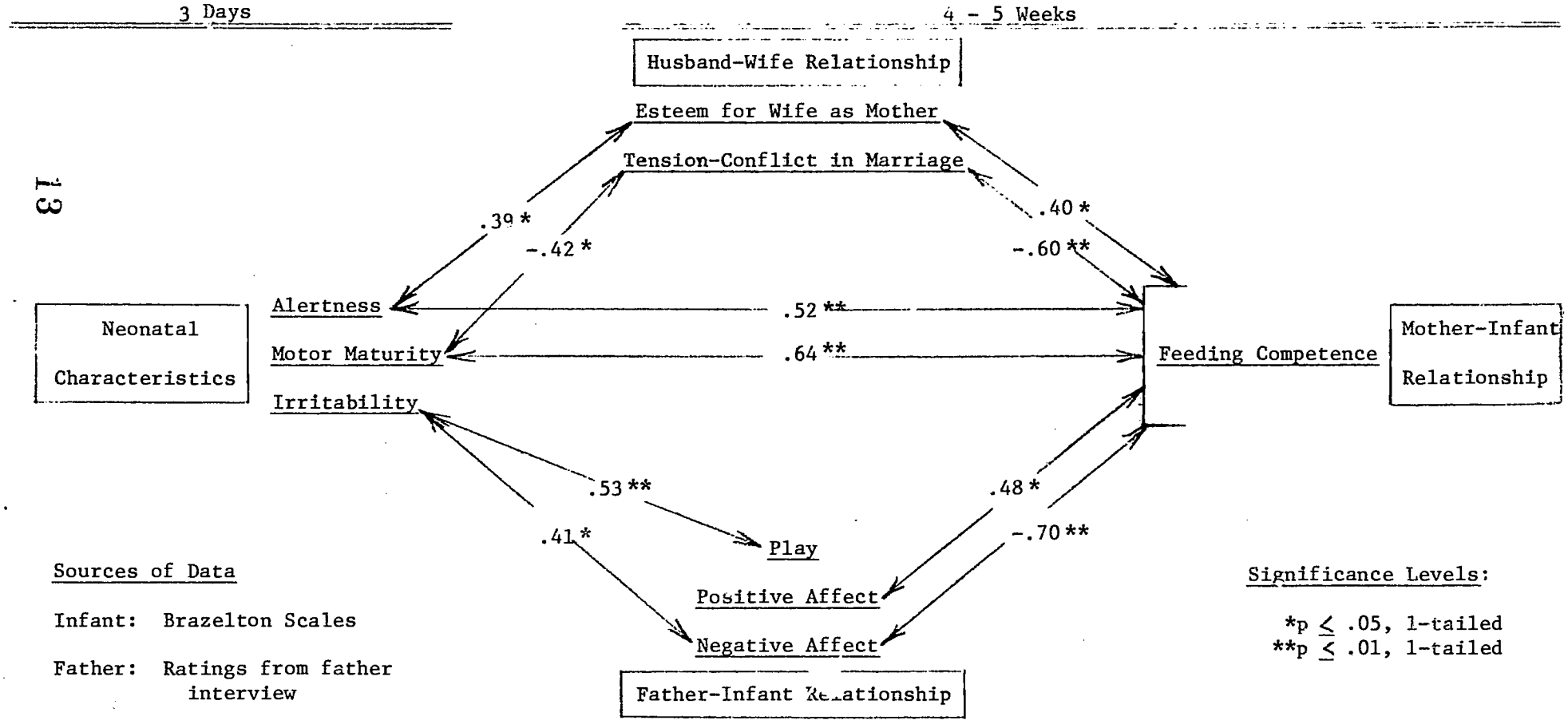
Standley, K., Soule, A. B., Copans, S. A., & Duchowny, M. S. Local-regional anesthesia during childbirth: Effect on newborn behaviors. Science, 1974, 186, 634-635.

Selected Variables Illustrating Mother-Father-Infant Interrelationships

(Male Infants N = 20)



Sources of Data

Infant: Brazelton Scales

Father: Ratings from father interview

Mother: Ratings during home observation

Significance Levels:

*p ≤ .05, 1-tailed
**p ≤ .01, 1-tailed