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Parents' Affective Experience: A Study of the Influences over Time of Infant Gestational Maturity and Maternal Perinatal Illness

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PARENTS' AFFECTIVE EXPERIENCE: A STUDY OF
THE INFLUENCES OVER TIME OF INFANT GESTATIONAL
MATURITY AND MATERNAL PERINATAL ILLNESS

by

Karin A. Ruetzel, B.A., M.A.

A Dissertation Submitted to the Faculty of the Graduate
School of Loyola University of Chicago in Partial
Fulfillment of the Requirements for the Degree of
Doctor of Philosophy

December

1987

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DEDICATION

To E. Christine and Herbert K. Ruetzel who provided the secure base and early inspiration for my personal and professional development.

ACKNOWLEDGEMENTS

I would like to thank my dissertation committee members: Dr. Deborah L. Holmes, who by being willing to serve as committee chair incurred still another demand upon her time, yet always remained supportive of this research endeavor and modeled a successful and appealing approach to research; Dr. Alan S. DeWolfe, who has been a warm, interested, and supportive presence on the Clinical Psychology faculty since the author's first year in graduate school; and Dr. Jill N. Reich, who gave the benefit of her careful and well considered approach to research.

I appreciate the participation in this study of the parents who took the time from busy lives to share their feelings and experiences.

I also gratefully acknowledge the unfailingly pleasant assistance of the Academic Computing Center staff.

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VITA

The author, Karin Anne Ruetzel, was born on September 15, 1957, in Ridgewood, New Jersey.

Her elementary education was in the public school system of Maplewood, New Jersey. Her four years of secondary education were obtained at the American Community School of Beirut, Lebanon, where she graduated in June, 1975. In September, 1975 she entered the University of Massachusetts at Amherst. In January, 1977, she transferred to Duke University, Durham, North Carolina and in May, 1979 received the degree of Bachelor of Arts magna cum laude. Her major was in psychology, and she graduated with Departmental Distinction in that field.

She entered the doctoral program in clinical psychology at Loyola University of Chicago in September 1980. During her academic training she held teaching and research assistantships.

In the summer of 1981 she completed clerkship training focusing on the provision of psychological services to neurologically-impaired patients at Lakeside Veterans Administration Hospital in Chicago. From September 1982 to August 1983 she trained at the Charles I. Doyle Child Guidance Center and the Day School of Loyola University working with

severely emotionally disturbed children. She then trained for one year at the Loyola University Counseling Center providing psychological services to a young adult population.

In January 1984 she was awarded the Master of Arts degree following the submission of a thesis entitled *A psychological study of working mothers who share child care with their spouses*. She has published and presented her work professionally in the areas of adult personality development, father behavior and gender role identity.

During the 1984-1985 academic year she taught undergraduate psychology at Loyola University and was also affiliated with a research group studying affective disorders in children at Michael Reese Medical Center in Chicago.

She completed her predoctoral clinical training in 1986 following a year of internship funded by the National Institute of Mental Health at Michael Reese Medical Center.

At the time that the dissertation was completed she had joined the staff of the Early Childhood Development Center in Evanston, Illinois.

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CHAPTER I

INTRODUCTION

There is little doubt that becoming a parent is a highly salient and complex emotional experience. With changing expectations of men's roles, this is increasingly true for fathers as well as mothers. For some families this experience is further complicated and intensified by the birth of a preterm infant or by maternal medical complications.

Some research efforts have been aimed at determining whether there are lasting consequences of a medically complicated perinatal period. These investigations have primarily focused on the consequences for the infant born at risk due to prematurity or medical condition.

Much less attention has been given to the experience of other family members following the birth. Goldberg and Marcovitch (1986) note an absence of studies on the experience and attitudes in later years of parents of preterm infants. In particular there has been little focus on the experience of fathers. It also appears that little or no attention has been paid to how the emotional experience of mothers who suffer perinatal illness may differ from that of women who have routine deliveries and recoveries.

Early psychological studies which looked at the outcome for infants born preterm often found damaging results. Impaired mother-infant relationships were reported as was an increased risk of child abuse (Klaus & Kennell, 1973). Further thought to these findings raised the question whether it was perhaps less the preterm birth itself and more the accompanying conditions which the preterm infant and family experience which resulted in the poor outcomes. For example, the infants who were typically studied were born in urban hospitals to often poor and single mothers who additionally faced an array of social and economic difficulties. Inadequate prenatal care and poor postnatal follow-up for these mothers and infants may also have increased the likelihood of a poor outcome.

It became apparent that other parent and infant populations needed to be studied in order to better isolate and understand the psychological consequences of preterm birth. Middle class married mothers and their infants born preterm were the subjects of a major study conducted at the Stanford University Medical Center. The researchers at Stanford University (e.g., Leiderman & Seashore, 1975; Leifer, Leiderman, Barnett & Williams, 1972 ; Seashore, Leifer, Barnett & Leiderman, 1973) established that conditions during the extended hospitalizations which most preterm infants require were also not helpful in fostering positive outcomes. Generally very little contact between parents and infants was permitted or encouraged. This separation was found to have harmful consequences for the parent-child relationship.

The current research endeavor grew out of the opportunity to study a sample of families whose first child was born preterm approximately five years ago. These children were afforded perhaps the optimal circumstances under which to recover from the experience of preterm birth. Their families are intact, suburban middle class, and presumably not unduly stressed by other circumstances. The children were born at a hospital which provided highly specialized and state of the art infant care. Upon discharge extensive follow-up provisions were made.

That the children did indeed benefit from these circumstances is demonstrated in the progress they have made in regular medical and cognitive assessments (Holmes, Reich & Gyurke, in press; Holmes, Reich & Rieff, in press). One aim of the current study was to understand their parents' affective experience over time and to consider how this may have contributed to the outcome to date. Parents' experience was assessed in the areas of their affective recollections of the perinatal period, perceptions of their competence as parents, feelings of involvement with their children and concerns about their children's development.

As maternal illness during the perinatal period also alters the typical events of this period, by necessitating maternal-infant separation and a delay in mothers' assumption of caregiving responsibility, it was anticipated that many of these same areas would be relevant in understanding the experience of families in which there were maternal

medical complications. A third group of families in which children were born at term to healthy mothers was included for comparison purposes.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

Introduction

The theoretical framework for this investigation is drawn from the psychological literatures on parenting and infancy. An important contribution of the latter is the transactional perspective described by Samaroff (1975) and adopted by others in the field of infant research. This perspective is characterized by recognition of the interaction of infant characteristics and those of the larger environment, including most importantly in the context of the current study, the parents. It is thought that the course of an infant's development is not likely to be understood correctly if parent characteristics and behavior are not taken into account. Likewise an understanding of the parents' responses to their child must take into account what they are responding to namely the child's characteristics. It must further be considered that within the family there are interactive influences between a mother's or a father's relationship with any one of the children, relationships with other children and the parental relationship.

In the current study the interactive influences over time of two perinatal variables, gestational age of the infant and maternal medical status, are of focal interest.

An extensive literature search revealed no more specific definition of the perinatal period than "the period around the birth". D.L. Holmes (personal communication, November 4, 1987) has suggested that at its broadest an appropriate definition would include the last trimester of the pregnancy, the birth itself and the first month following the birth (the neonatal period). For the purpose of the current research this definition will be accepted.

The high risk infant literature, comprised of findings in the psychological and medical domains, is drawn upon below to describe the characteristics of preterm infants and to demonstrate the impact of these characteristics during the perinatal period.

There is little documentation of the psychological sequelae of maternal perinatal illness. It is postulated in the current study that the resultant maternal-infant separation and delay in maternal responsibility for caregiving are also likely to exert an interactive influence on family members. Findings from the high risk infant literature on maternal-infant separation which offer a basis for this contention are presented below. The literature on Cesarean delivery is also drawn upon as pertains to events during recovery.

Specific areas which are thought likely to be influenced by perinatal variables are parents' affective recollections of this period and their feelings of competence as parents. According to the transactional model, these would then have implications for the child's development. Existing findings relevant to these areas are presented next.

As far less research has been conducted with fathers than with mothers in this context, less is known about their responses to a medically complicated birth. A small number of studies have been conducted with fathers and high risk infants. Discussion of the findings of these studies is supplemented with a more general review of factors which influence fathers' involvement and relationships with their children. In keeping with the transactional perspective these include characteristics of children, parents and the larger environment.

Finally, the topic of parents' concerns about their children is addressed. The literature suggests that in the case of an infant born preterm parental concerns may not only be indicative of a child's functioning but may also have implications for the parent-child relationship.

Preterm Infants

Preterm infants are defined as those born after a gestation period of less than 38 weeks (Holmes, Reich & Pasternak, 1984). Estimates of

the percentage of preterm births in the U.S. each year range from 6.7% in 1984 (Bureau of the Census, 1987) to somewhat less than 10% (Holmes et al., 1984) to 14% (Parke & Tinsley, 1984). Even if one accepts the estimate provided by the Census Bureau, which may be lower than the others because it is based on birthweight rather than gestational age data, this represented almost 250,000 infants born in 1984 alone.

At significantly greater risk for preterm birth are infants born to young, poor, urban and often single mothers. These factors combine to make the rate of low birthweight infants approximately double among black families in comparison with white families (Bureau of the Census, 1987). However, preterm infants are also born to older, middle-class and married mothers. According to Goldberg and DiVitto (1983), 50% of preterm births are unexpected and unexplained by demographic factors. This statistic highlights the need not only for further research into the causes of preterm birth, but also studies such as the current one, which have as their goal a better understanding of families' experience once a preterm birth has occurred.

Parents are likely to see their preterm infant for the first time in the neonatal intensive care nursery (Holmes et al., 1984). Initially they may not be able to hold or even touch the infant. Once greater contact becomes possible it continues to differ greatly from that between parents and healthy term infants because of the environment in which it takes place. Goldberg and Marcovitch (1986) report that the

highly sophisticated medical equipment and the large number of medical staff who are present in the intensive care nursery contribute considerably to parents' sense of being overwhelmed following the birth of a preterm infant.

Holmes et al. (1984) describe the typical characteristics of preterm infants. They tend to be smaller, more fragile in appearance (with the fragility accentuated by medical equipment), less active and less responsive than normal newborns. They sleep even more than normal newborns--over 21 hours per day--and are unlikely to cry. When they do cry it is with a weaker and higher pitched cry than that of the term newborn.

Particularly if they have been unable to be significantly involved in the care of the infant during the hospitalization, parents may feel considerable anxiety about their ability to care for their infant born preterm once discharged from the hospital. In fact the physiological immaturity of the preterm infant may mean that providing care is more difficult than for a term infant. For example, the infant's sucking reflex is not as strong so that feeding sessions may take longer (Holmes et al., 1984). Feeding sessions may then need to be more frequent as the infant has received less nourishment (Parke & Tinsley, 1984). These factors appear to make early care of the infant even more stressful for the parents of a preterm infant than it typically is for new parents.

It is one of the goals of the current study to examine the extended psychological consequences of the emotional crisis of preterm birth. Medical advances now mean that more and younger preterm infants are viable at birth and in fact that most of these children catch up developmentally after their recovery from initial complications (Goldberg & DiVitto, 1983). However, it is less clear how parents' experiences during the perinatal period may affect aspects of the parent-child relationship and thereby continue to exert an influence on children's development.

Maternal Medical Status

Maternal medical complications present a somewhat overlapping set of conditions with those of preterm birth during the perinatal period. The experience of separation from their infants is one which is shared by and may be even more stringently enforced for mothers who exhibit postpartum infections as did the subjects in the current study. The early assertions (e.g., Klaus & Kennel, 1973) of a direct and harmful relationship between mother-infant separation during the postnatal period and the later mother-child relationship are no longer as widely accepted. However, more recent findings continue to suggest that separation during this time is stressful for mothers which may indirectly affect their relationships with their children.

Pederson, Bento, Chance, Evans and Fox (1987) found that mothers of both well and ill preterm infants felt alienated, helpless and resentful as a result of separation from their infants. While ill mothers do not (necessarily) have to cope with concerns about an at risk infant, they may well share frustration at being unable to interact with and care for their newborns.

Goldberg and Marcovitch (1986) note that the taking over of care of a preterm infant by medical staff is essential for the baby but that for the parents this emphasizes the loss of the parental role. Mothers who must relinquish the care of their newborn to others as a result of their own illness may also experience this sense of loss. Fathers of preterm infants may also experience the loss of an anticipated role but in the event of maternal illness during the perinatal period fathers of healthy term infants appear to be in a unique position for increased involvement with their infants.

There is some evidence that fathers do become more involved following a Cesarian section delivery, an analagous situation to the extent that mothers must recuperate from the surgery. Petersen, Cain, Zaslow and Anderson (1980) presented results showing more involvement in routine care

activities such as feeding and bathing and more eye contact with their children lasting up to five months after the birth by men whose wives had Cesarean births. Vietze, Mac-Turk, McCarthy, Klein and Yarrow (1980) studied 75 families and the mode of delivery of their first child. These authors reported that at the six month follow-up fathers whose infants had been delivered by Cesarean section were more soothing with their infants than those whose infants had been delivered vaginally. The men in each of these studies apparently increased their participation during the early postpartum weeks but remained more involved in caregiving for a period of time even after their wives had medically recovered.

Further follow-up found that extensive father involvement during early infancy does not necessarily result in a continued major role in the daily tasks of child care. By the 12 month follow-up conducted by Vietze et al. (1980) there was no longer any difference between fathers of babies delivered by Cesarean section and those delivered vaginally. Pedersen also reported in an interview (Kabatznick, 1984) that fathers generally revert to a more traditional role by the time their children are a year old. He suggested that the fathers saw themselves as helping out in a crisis situation and that their participation diminished when the need for it was no longer as great.

Parke and Tinsley (1984) note that while the caregiving pattern may be short-lived, the longterm impact of early heightened father involvement remains to be determined. They wonder whether one lasting benefit might be that these fathers would more readily assume responsibility for child care in future situations of need.

It will be one of the tasks of the current study to determine whether heightened paternal involvement occurs when there is maternal perinatal illness. The longevity of involvement and its consequences will also be explored.

Affect during the Perinatal Period

Rodholm and Larson (1979) studied the first meeting of fathers and their normal newborns. They found that fathers are like mothers in that they explore their infants in stereotypical ways, touching the infants arms and legs for a few minutes and then moving on to examine the trunk. The authors noted that these behaviors allow parents an acquaintance with how the baby feels and the important assurance that the baby is "okay". Attachment to their infant begins as they experience the wonder of having become parents of a healthy normal infant. It is normal for parents of a healthy term infant to also experience some more negative

feelings as the reality of parenthood becomes integrated during the perinatal period (Lazarre, 1976),

Describing parents' reactions to their children during the early postnatal period, Lamb, Chase-Lansdale and Owen (1979) note that "most parents are elated with their infants (and) develop strong affectionate bonds very rapidly (p. 279)". However, they note further that "not all newborns are equivalently healthy or attractive and the parents' desire to care for their infant may be sorely strained. Sick, premature and otherwise unattractive infants . . . are particularly likely to elicit ambivalent emotions in their parents (p. 279)". Sameroff and Feil (1985) state even more succinctly, "children who need specialized caregiving, for example a sickly preterm infant, are at risk for poor outcome not because of prematurity but because of parents' negative reactions (p. 83)".

Obviously the parents of a preterm infant are not able to provide themselves the assurance that their infant is "okay". They may initially experience shock and dismay (Schwartz & Schwartz, 1977). Parents must then cope with feelings of guilt, blame, and failure (Johnson, 1979).

A study was conducted which examined the interaction between characteristics of preterm infants and the experi-

ences and responses of their caregivers during the perinatal period. Frodi, Lamb, Levitt, Donovan, Neff and Sherry (1978) reported that mothers and fathers of preterm infants found the cries and appearance of a preterm infant to be more aversive than those of a term infant just prior to the discharge of their own infant from the hospital.

Further support for the idea that the appearance of a preterm infant may be found aversive was found by Maier, Holmes, Slaymaker and Reich (1983), who conducted an analogue study with college students. The students were shown slides depicting term and preterm infants and were asked to rate the appearance of the infants and their desire to interact with them. Term babies were rated significantly higher, both in appearance and in eliciting a desire for interaction.

Frodi et al. (1978) suggest that by a process of generalization a child born preterm could continue to be perceived more negatively by parents even after the initially aversive characteristics had been outgrown. Other authors (e.g., Holmes et al., 1984) concur that this may contribute to the greater risk of abuse for children who are born preterm.

It remains to be investigated in the current study whether parents retain negative recollections of a stressful perinatal period and whether there are other lasting and measurable consequences of this period.

Parental Self-Ratings of Competence

Kaplan and Mason (1977) report that parents' concerns about their competence in caring for a preterm infant result not only from the infant's size and appearance but are also reinforced by parents asking themselves how they can be competent to care for a baby who has needed such expert care and been so inaccessible. Some fathers may, following the birth of an at risk infant, attempt to support and reassure their wives by modeling an attitude of confidence (Holmes et al., 1984). Given the circumstances, they are likely also feeling anxious and overwhelmed, but according to Redshaw, Rivers and Rosenblatt (1985) may feel required as men to put on a "strong silent" front.

A two year longitudinal study undertaken by researchers at Stanford University (Leifer, Leiderman, Barnett & Williams, 1972) studied a sample of white middle class mothers of preterm infants who differed in the nature of contact allowed with their infants during hospitalization. Mothers

and preterm infants were randomly assigned to a visual contact only ($n = 26$) or a physical handling ($n = 23$) group for the three to 12 weeks that infants were in the intensive care nursery. A control group ($n = 24$) of mothers and term infants were allowed regularly scheduled contact during their routine length hospitalization.

Maternal self-confidence about caregiving ability was assessed in the study by a paired comparison questionnaire in which the mother chose the most effective caregiver in a number of situations. Self-confidence was found to be lowest for mothers of firstborns who had not been able to handle their preterm infant (Seashore, Leifer, Barnett & Leiderman, 1973).

While the differences in maternal self confidence disappeared during the first months it may be that the early experiences of these mothers had other lasting consequences. Leiderman and Seashore (1975) reported that six subjects' marriages ended in divorce over the course of the Stanford University study. Five of the divorces occurred in the visual contact only group and two of these mothers also relinquished custody of their children. It may be that early contact restricted to seeing their infants in the intensive care nursery communicated to the women who relinquished cus-

tody that they were incompetent to care for their children. This may in turn have contributed to a decreased investment in the maternal role.

That the marriages of the subjects in the Stanford University study ended within two years of the birth suggests that there may also have been marital difficulties prior to the added stress of the birth of a preterm infant. If so, it may have been difficult for fathers to be optimally supportive during the perinatal period thereby contributing further to the breakdown of the mother-child relationship. Minde, Trehub, Corter, Boukydis, Celhoffer and Marton (1978) found that mothers whose husbands were supportive tended to visit their preterm infants more than those whose husbands were not. Higher visitation rates during hospitalization were positively correlated with fewer mother-child parenting problems at follow-up.

It is unclear from the discussion of the Stanford University study to whom the mothers relinquished custody. This makes it impossible to ascertain whether the fathers were equally uninvested in caring for their children or whether they had in fact desired and won custody of the children. If the latter were true, it might be that the fathers' early experiences with their infants had been dif-

ferent from that of their wives and that this had more positively influenced their paternal role perceptions.

Richards (1983) suggests an intriguing mechanism by which this may have occurred. He postulates that some fathers of preterm infants may be relatively unintimidated by the machinery in the intensive care nursery and in fact form a relationship with their child via an interest in the monitoring and life-support equipment. Presumably this could occur even if the fathers were substantially restricted from other forms of interaction with their infants.

In the current study mothers and fathers provided recollections of their feelings of competence when their children were infants and at later points in time. This allowed focus on the impact of preterm birth and of maternal-infant separation due to maternal illness on mothers' and fathers' feelings of competence.

Paternal Involvement

In their discussion of neonatal transport and regionalized medicine, Holmes et al. (1984) note that following transport of a newborn to a regional perinatal center the

father's role may be expanded. During the mother's recovery he may bring breastmilk to the infant and relay information back to the mother. Depending on the physical status of the infant he may also have the opportunity to hold and feed his child. Some fathers who have become involved in caregiving over an extended hospitalization have reported a special attachment to their child (Arney, Nagy & Little, 1978).

Whether a father becomes involved in this fashion seems likely to be influenced by a number of factors which also play a role in other aspects of parents' involvement with their infants. One variable of importance would appear to be the characteristics of the infant and the father's reaction to these characteristics.

Parke, O'Leary and West (1972) reported that fathers interact less than mothers with an infant who is heavily medicated as part of the birth process. Fathers were more likely to initiate interaction if the infant was alert and awake. Peterson, Mehl and Leiderman (1979) suggest that men are not as biologically or culturally primed to be responsive to infants and therefore a father may require longer exposure to an infant before he becomes as responsive as the mother. That fathers have the capacity to become as involved emotionally with their infants as do mothers has

been shown by Greenberg and Morris (1974). In their study first time fathers of term healthy infants became "engrossed" with their babies during the postnatal hospitalization. There is also documentation that fathers are as competent as mothers in caring for a newborn (Parke & Sawin, 1976).

Fathers have been found to be less likely to interact with irritable, fretting infants than with those having an easier disposition (Spelke, Zelazo, Kagan & Kotelchuck, 1973). As preterm infants have been described as more likely to be restless, distractible and irritable throughout the first year of life (Musser, Conger & Kagan, 1974), this may have considerable implications for a father's desire to interact with his infant born preterm. According to Rendina (1976), the sex of the infant may further influence the level of paternal involvement. She found fathers more willing to be involved with firstborn sons than firstborn daughters rated as having a difficult temperament.

Gender role stereotypes may also influence parents' involvement with their children. Biller (1971) postulated that fathers were more involved with strong and active male infants in comparison with those who appeared more fragile and listless because they seemed more masculine. This sug-

gests that preterm male infants would be at a disadvantage in gaining their father's attention and involvement.

Parental role perceptions would also appear to be a significant influence on behavior in the perinatal period. Fathers seem to have the option of two roles available to them during this time. Some men may assume the role of providing emotional support to their wives and are less directly involved with their infants while others may be involved in learning to care for their infants. Until fairly recently, the former role was considered the normative one for the new father, however today there is a greater likelihood that fathers will perceive their role as also involving infant care during the early months.

An obvious factor in this change is women's increased labor force participation. In 1980, 39% of married mothers with infants under one year worked outside the home (Bureau of the Census, 1987). By 1986, this number had increased to 49.8% (Bureau of the Census, 1987).

Studies of maternal employment show that the extent to which child care during infancy is shared by parents may be based largely on psychological variables (Ruetzel, 1984). In a small percentage of families in which both parents work outside the home the parents may be predisposed by their

backgrounds and values to substantially divide child care between themselves (Russell, 1982). As the societal prescription of child care as women's work is a strong one, young children are more typically cared for by a "mother substitute" when their mother is unavailable (Levine, 1976).

Within the family the degree of maternal restrictiveness or willingness to share the responsibility for caregiving may be an important determinant of the father's early role. McKee (1982) reported that mothers in her study construed their maternal role such that they did not see primary responsibility for infant care as a matter of choice. Feldman and Nash (1986) note the constraints on maternal role behavior "since decision-making regarding the child is always (the mother's) regardless of how much or how little child care responsibility she delegates to others (p. 226)". In contrast the societal conceptualization of the father role is broader than that of the mother (Biller, 1984), but rarely includes primary responsibility for care of an infant.

It may be difficult for a mother who had anticipated that she would be the primary caregiver to be unable to assume this role because of her own or the infant's medical status. Increased involvement in caregiving by the father in the event that the mother is unavailable during the peri-

natal period may even be perceived as a threat to her role. It is suggested that the resultant marital stress is a contributing factor to the higher divorce rate found in some studies of families with high risk infants (Parke & Tinsley, 1984).

Marital disharmony as well as the opportunity for greater father involvement in caregiving may be avoided by the help of other female relatives following a medically complicated delivery. Bloom-Feshbach (1979) found the use of social networks for child care to be negatively correlated with heightened father participation during the early weeks.

When an infant is born preterm the traditional paternal role of play partner may also be threatened. Numerous studies (e.g., Belsky, 1979; Clarke-Stewart, 1978; Field, 1978; Lamb, Frodi, Hwang & Frodi, 1982; and Russell, 1979) have shown that fathers spend proportionately more time in play and in particular in physically stimulating play than mothers. However Holmes et al. (1984) note that parents are less likely to engage in play with their infant if they must be overly concerned with the health and physical well-being of the infant. Tinsley, Johnson, Szczypka and Parke (1982) found that the characteristic differences between fathers

and mothers were not evident in their play with infants born preterm three weeks after discharge from the hospital. Evidence presented below which indicates that parents of preterm infants sometimes have difficulty relinquishing their extra concern suggests that the difference may persist beyond early infancy.

It seems likely that some fathers of preterm infants who are unable to interact with their infants in the manner they may have anticipated seek out other ways to become involved. A British study (Hawthorne, Richards, and Callon, 1978) found that fathers of preterm infants who demonstrated a high level of interest by their visitation patterns during the hospitalization were more involved in caring for their infants than were fathers of term infants once the infants were at home. At a later date one of the researchers (Richards, 1983) proposed that there are two distinct types of fathers of preterm infants: those who maintain a high level of involvement from the start and those who do not visit their infants during the hospitalization until or unless their wives are able to accompany them. He suggests that the first group's involvement during the hospitalization occurs as an extension of "the typical male role" of crisis management. While he goes on to say that this may lead to "less typically male participation in care", he offers no explanation for this further extension.

In reviewing the results of the Hawthorne et al. study Parke and Tinsley (1984) remark upon the particular helpfulness of the fathers' participation given the difficulty and stress which often accompany caring for a preterm infant. They attribute greater father involvement in caregiving "at least partially" to the desire of the father to relieve the mother rather than to a spontaneous desire to interact with his child.

Tinsley and Parke (1983) also note that previous studies of father involvement during the perinatal period have not sufficiently specified the factors which promote differential degrees of paternal involvement nor the subsequent impact of this involvement on family relationships. For example, it is unclear what leads to the special attachment of fathers to their infants in the neonatal transport situation. Does it occur because the crisis surrounding the birth of the infant is perceived as sufficiently great as to outweigh those characteristics which might otherwise decrease father-infant interaction? Or is maternal unavailability the strongest factor determining father involvement at this time?

The current study allows focus on the involvement of fathers in families experiencing various circumstances dur-

ing the perinatal period. The persistence of early levels of father involvement over time will also be examined.

Parental Concerns and the Parent-Child Relationship

Drawing on their earlier work (Caplan, Mason & Kaplan, 1965), Kaplan and Mason (1977) have developed a model for use in their work with the parents of infants born preterm. This model suggests that there are a number of psychological tasks which the parents of a preterm infant must negotiate. These tasks are psychological preparation for the infant's possible death, acknowledgment of feelings of failure at not having delivered a term infant, resumption of the process of relating to the infant, and finally understanding of the special needs and characteristics of the infant. An important part of this last task is that these needs should (in by far the majority of cases) be viewed as temporary.

Based on their study of parents of preterm and developmentally delayed children Goldberg and Marcovitch (1986) note that the biological goals of survival, growth and development must be met before these parents can share the concern of other parents for such things as the academic success and life satisfaction of their children.

These reports suggest that there is, or should be, a progression in the concerns of parents of an infant born preterm. However, there is also evidence that it may be difficult for parents to relinquish concerns which are rooted in the early experience of the preterm birth. Leifer et al. (1972) found that mothers of preterm infants in their sample "whose infants were nearly certain to survive and were without obvious defects (p. 126)", nonetheless expected their infants to die or be permanently damaged by the early birth. This may be related in part to the lower self-ratings of competence these women were found to have.

Kaplan and Mason (1977) found variable reactions among parents with regard to the degree of anxiety, or at the lower end of the continuum curiosity, about when their baby would "catch up" with the term infant. The nature and longevity of parents' concerns will be examined in the current study.

Parents' perceptions of and concerns for their children are likely to influence their relationships with them. Holmes et al. (1984) reported that the parents of a preterm infant may initially hold back from becoming attached to their child, out of fear that the child may die. As suggested by Caplan et al. (1965) this is a necessary first

step, however the process of relating to the infant must resume once survival has been assured. Failure to relate appropriately is likely to have serious consequences for the child such as the increased incidence of failure to thrive (Vietze et al., 1980) and abuse (Holmes et al., 1984; Klaus & Kennell, 1976) found for infants born preterm.

Another factor thought to contribute to disturbance in the parent-child relationship and further escalate the potential for abuse is parents' lack of awareness of developmental norms (Kaplan, 1980). Miezio (1983) reports that parents of a disabled child may be aware of the ages at which normal children reach major developmental milestones (sitting, first word, walking, etc.) but may not be aware that these ages are inappropriate for their own child. Inappropriate expectations for the development of an infant born preterm may also result if parents are not aware that well into the second year the "normal" developmental time schedule may not fit their child (Holmes et al., 1984). Goldberg and Marcovitch (1986) write that "emotional bonds and social relationships between parent and child will flourish only after parents have established expectations of growth and development that are adjusted for the child's situation (p. 260)".

The majority of parents who have an infant born preterm are able to make the necessary adjustments in order to form a positive relationship with their child. However, it remains to be considered how the event of preterm birth continues to play a role in the parent-child relationship over the course of time. The question is asked in this study whether parents consciously identify the circumstances of the birth as playing a role in their relationship with their firstborn son.

Summary

The preceding literature review provides the background to test a number of hypotheses and to begin to seek answers to some broader questions about the influences on parents over time of factors originating during the perinatal period.

Given the difference in the events which they experience during the perinatal period, and perhaps most significantly given the difference in the characteristics of the infant born preterm in comparison with one born at term, parents of preterm infants have been shown to experience more negative affect during the perinatal period than parents whose infants are born at term. It is proposed in

the current study that these factors remain salient over time. The first hypothesis predicts that parents of preterm infants retain more negative affective recollections of the perinatal period than parents whose infants were born without complication.

As mothers who themselves suffer perinatal medical complications share some of the stressful experiences of parents of a preterm infant, including separation from the infant and being forced to relinquish the anticipated caregiving role, a related question is whether they too retain more negative affective recollections of the perinatal period than mothers who deliver without complication.

The second hypothesis predicts that parents of preterm infants recall more negative first reactions to their infants than parents whose infants are born at term. No group differences would be expected in parents' first reactions to other children born at term.

The literature suggests that not only parents' perceptions of their infants but also their self-perceptions as parents may be adversely affected by a medically complicated birth. Existing research documents that limited contact with their infants during the postnatal hospitalization may be an important factor contributing to parental self-percep-

tions of low competence. The third hypothesis predicts that parents of preterm infants recall feeling less competent during the perinatal period than parents whose infants were born without complication.

A related question is again whether mothers who experienced illness and as a result separation from their infants also recall feeling less competent during the perinatal period than mothers who delivered without complication.

In the current study sex differences between parents in assessments of competence during the perinatal period and five years later will be explored as will subjects' conceptualizations of parental roles.

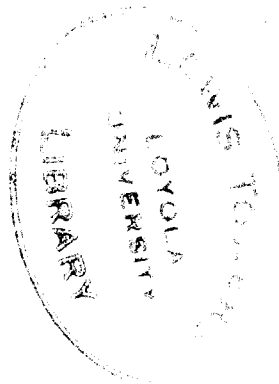
There is some support for the idea that father involvement may increase when there are perinatal complications. However, previous studies have not indicated which factors are most important in determining the level of paternal involvement. The fourth hypothesis predicts that the combination of maternal unavailability due to perinatal illness and an uncompromised infant is most likely to result in high levels of paternal involvement during the perinatal period. Whether patterns of involvement from this period last will also be investigated.

Sex differences between parents in their involvement with their children at various times will also be explored.

Postulating that experience over time contributes to self-assessment of competence, it is anticipated that fathers' involvement with their children and their ratings of competence will be positively correlated.

Parents of a preterm infant are at first confronted with the possibility that their infant may not survive and then with an infant who for a period of time differs considerably from a term baby. For some parents of preterm infants these factors may make it difficult, even after the passage of considerable time, to relinquish a sense of heightened concern. However, the literature also suggests that forming realistic perceptions of a child are important to the development of a good parent-child relationship. In the current study the nature and longevity of the concerns of parents who had preterm infants will be compared with those who had infants born at term.

Finally, it will be considered whether parents in the current study consciously identify perinatal factors as playing a role in their relationships with their children.



CHAPTER III

METHOD

Subjects

The subjects in this study are a sample of middle class parents and their firstborn male children delivered at a Chicago-area suburban hospital. Birth order and sex were held constant as firstborn males appear to be slightly more highly represented among preterm infants in comparison with both later born children and females (Holmes et al., 1984; Schwartz & Schwartz, 1977). At birth infants were grouped according to gestational age, medical status and length of hospitalization. The rationale for classification according to these variables is provided by Holmes et al. (1984).

Mothers in the current study were grouped according to their perinatal medical status. Medical complications consisted of infections which mothers developed during the perinatal period.

These classifications resulted in three groups: (1) families in which healthy mothers gave birth to preterm

infants ($n = 7$), (2) families in which mothers with perinatal medical complications gave birth at term to healthy infants ($n = 6$), and (3) families with both healthy mothers and healthy term infants ($n = 5$). Numbers of subjects in each group refer to families on which there are essentially complete and codable data. These families represent a subset of those originally contacted.

In the PRETERM group infants had an average gestational age of 33 weeks at birth. While mothers in this group were discharged earlier, infants' length of hospitalization ranged from 11 to 27 days with a mean of 18.5 days which were spent in the infant special care unit. Maternal perinatal illness in the MATERNAL ILLNESS group necessitated maternal-infant separation during the postnatal period and somewhat extended hospitalizations for both mothers and infants. Length of hospitalization for this group ranged from 7 to 9 days with a mean of 8.5 days. The NORMAL DELIVERY group of healthy mothers and healthy term infants was considered to have an uncomplicated perinatal experience and mothers and infants were discharged together after 3 to 6 days with a mean of 4.0 days.

Five years ago when the families were recruited for the Infant Development Project, an interdisciplinary longi-

tudinal study of which the current study is an offshoot, it was established that they were demographically quite different from families with high risk infants typically studied. Rather than being nonwhite, poor, unmarried, and living in an urban environment, mothers in the sample were predominantly white, middle class, married and living in a suburban environment. More intensive analysis of family demographic data was undertaken with the subset of participants in the current study.

An analysis of variance indicated a significant difference between groups of parents in level of educational attainment, $F(2,33) = 3.56, p < .04$. The posthoc comparison indicated that PRETERM parents were better educated than MATERNAL ILLNESS parents by virtue of all having completed at least some years of college, $t(21.2) = 2.63, p < .02$. A t test indicated no significant difference in educational attainment between mothers and fathers in the sample, $t(33.03) = .89, ns$.

Using the Occupational Ranking Scale devised by Hollingshead and Redlich (Myers & Bean, 1968), there was no significant difference in occupational status between fathers and those mothers who work outside the home, $t(32.81) = 1.52, ns$. While the overall analysis of variance did not

show this, $F(2,32) = 2.17$ *ns*, a significant posthoc test demonstrated that when occupations of mothers and fathers were looked at together, MATERNAL ILLNESS parents had higher status occupations than PRETERM parents, $t(2.13) = 2.14$, $p < .05$.

The groups did not differ significantly in the total number of hours per week parents were out of the home for paid employment, $F(2,29) = .19$, *ns*. Mothers in all groups were far more likely to work part-time than were fathers, $t(30) = 5.85$, $p < .001$. Mothers worked an average of 17.35 hours per week while fathers worked an average of 51.13 hours per week.

The results of these analyses are depicted in Table 1, showing breakdown by group and Table 2, showing breakdown by sex of parent.

As all parents had completed at least a high school education, and the group which had the least secondary education had the highest status careers, it was felt that the statistical differences did not significantly detract from the overall demographic similarity of the three groups.

Table 1

Educational and Occupational Characteristics of Preterm Maternal
Illness and Normal Delivery Groups

VARIABLE	PRETERM	MATERNAL ILLNESS	NORMAL DELIVERY	<u>F</u>
Educational attainment ^a				
<u>M</u>	2.71	2.17	2.50	3.56*
<u>SD</u>	.47	.58	.53	
Occupational status ^b				
<u>M</u>	2.08	1.25	1.40	2.17
<u>SD</u>	.86	1.06	1.27	
Weekly hours absent from home for paid employment				
<u>M</u>	35.92	32.73	29.38	.19
<u>SD</u>	18.36	27.51	27.31	

^aBased on categorical rating (1=high school; 2=college; 3=graduate study).

^bUses Hollingshead & Redlich's Occupational Ranking Scale (Myers & Bean, 1968).

*p < .05

Table 2

Mothers' and Fathers' Educational and Occupational Characteristics

VARIABLE	MOTHERS	FATHERS	<u>t</u>
Educational attainment ^a			
<u>M</u>	2.39	2.56	.89
<u>SD</u>	.61	.51	
Occupational status ^b			
<u>M</u>	1.34	1.88	1.52
<u>SD</u>	1.14	.99	
Weekly hours absent from home for paid employment			
<u>M</u>	17.35	51.13	5.85***
<u>SD</u>	20.12	10.28	

^aBased on categorical rating (1=high school; 2=college; 3=graduate study).

^bUses Hollingshead & Redlich's Occupational Ranking Scale (Myers & Bean, 1968).

***p < .001

In the five years since recruitment to the Infant Development Project subsequent children were often born to the participating families. While the overall analysis of variance did not indicate this, $F(2,15) = 1.55$ *ns*, the posthoc test suggested that in the subset of families in the current study there was a nonsignificant trend for families who had a preterm first birth to have fewer children at follow-up than families who had an uneventful first birth, $t(10) = 1.82$, $p < .10$. PRETERM families had a mean of 1.71 children at follow-up while NORMAL DELIVERY families had a mean of 2.40 children. MATERNAL ILLNESS families had a mean of 2.00 children. Given that each family had at least one son, there was no further difference in the proportionate number of male and female offspring across groups.

At the time of their parents' participation in the current study firstborn sons in all groups were approximately five years old, $M = 5.19$, $SD = .46$.

Measures

Archival data were collected from the participants' hospital records. Information about infants' gestational age, perinatal medical status of mothers and infants, length of hospital stay and parents' involvement in infant care during hospitalization was derived from this source.

When children in the study reached the age of 18 months their mothers were surveyed with regard to various child care practices. From these questionnaires information was obtained about breast and bottle feeding and who was most likely to provide care for the child in his mother's absence.

Around the time of their son's third birthday mothers were again asked to respond to a questionnaire. Questionnaire items covered the number and nature of concerns mothers had about their sons as well as the feelings they recalled from the time of the birth. Mothers used a 7 point scale to rate their feelings on seven semantic differential items: HAPPY-SAD, WORRIED-NOT WORRIED, EASY-HARD, PAIN-PLEASURE, EXCITED-CALM, ANXIOUS-RELAXED, JOY-DESPAIR, ANGRY-GRATEFUL.

Both the 18 and the 36 month questionnaires were administered as part of the Infant Development Project. These represented two points in time at which parents were asked to participate in the project. They were also asked to bring in their children for evaluation at the ages of 2, 4, 6, 9, 12, 18, 36, and 60 months. Fathers' participation at these times provided another variable of interest in the current study.

All remaining data were collected by use of the Parent Questionnaire which was designed to elicit detailed information from both mothers and fathers around the time of their son's fifth birthday. The Parent Questionnaire was pilot tested with a sample of six mothers and four fathers prior to its use in the current study.

In addition to providing updated demographic information, parents were asked to respond to open-ended questions about their first reactions to each of their children, their concerns about their children, the basis of their relationship with each child and what they felt the important attributes of good parents to be.

Parents were also asked to provide percentage ratings of their own involvement and that of other caregivers in the daily care of their children as infants and at the time that their first child was five years old. They reported their involvement in feeding, bathing, diapering/dressing, getting up during the night, attending pediatrician visits and playing during the first 6 months. At the time that the first-born child was five years old the child care activities of interest were feeding/preparing meals, bathing/supervising hygiene, dressing, taking care of during illness, getting up during the night, reading stories, engaging in physical

play, playing with toys, teaching verbal/cognitive skills, teaching motor skills and providing discipline.

Finally, parents were asked to complete a number of self-rating scales. They were asked to provide retrospective ratings of their feelings at the time of the birth of their first child, when their first child was six months old, at the time of the birth of their second child (if applicable), at the time of the birth of their third child (if applicable) and at the time that their firstborn had reached the age of five. With the exception of one question which asked about parents' feelings of involvement in the current daily lives of each of their children and used a 5 point scale, parents rated themselves at these times using a 7 point scale. An assessment of their general feeling of involvement in the parental role was provided by parents' ratings on the INVOLVED-UNINVOLVED dimension. Cumulative ratings on seven semantic differential items: HAPPY-SAD, ANXIOUS-RELAXED, NOT WORRIED-WORRIED, ANGRY-GRATEFUL, CONTENT-DISSATISFIED, WORTHLESS-VALUABLE, JOY-DESPAIR provided a similar if not identical score with which to compare mothers' earlier recollections of the time of the first birth. Four additional items: SKILLED-UNSKILLED, SUCCESSFUL-UNSUCCESSFUL, EFFECTIVE-INEFFECTIVE and LACKING CONFIDENCE-CONFIDENT were included to obtain an assessment of parents' feelings of competence in their parental role.

Procedure

All subjects were initially recruited to the Infant Development Project within 36 hours of the birth of their first child. As described above, participation in the longitudinal study continued over a period of five years. For the current study 24 families were contacted by mail around the time of their first child's fifth birthday and were asked to indicate, by returning a postcard, their willingness to complete the Parent Questionnaire. One family had moved and a forwarding address was not obtainable and five families did not respond to the researcher's letter. Eighteen mothers and seventeen fathers returned postcards stating that they were willing to participate.

Subjects were given the option of responding to the Questionnaire in writing or in an interview format. Seven parents chose the latter format and attempts were made to schedule interviews at times convenient to them. Five parents chose to be interviewed over the telephone while one mother preferred to be interviewed in her home. One mother who had originally asked to be interviewed by phone was subsequently unable to find time for the interview. All but two parents (both fathers) who had originally agreed to participate in writing returned completed questionnaires. The

net result was 32 complete questionnaires yielding information on 18 families.

Where parents gave multiple responses to Questionnaire items their first answer was the one scored for statistical purposes. Most items on the Parent Questionnaire were numerically scorable. When coding criteria had to be created for an item this was done without knowledge of group membership. A naive rater was used to assure unbiased rating as "positive" or "negative" of the words used by parents to describe their first reactions to their children.

CHAPTER IV

RESULTS

The first series of analyses was performed to determine whether differences would emerge in parents' affective recollections of the perinatal period. Around the time of their child's fifth birthday parents were asked to recall their feelings at the time of the child's birth. Using a 7 point scale parents rated themselves on seven affective dimensions; a high score indicated more negative affect was recalled. Scores ranged from 9.00 to 42.00. The PRETERM group had a mean score of 23.46 The MATERNAL ILLNESS group had a mean score of 17.91 and the NORMAL DELIVERY group had a mean score of 15.25.

Hypothesis 1 predicted that parents who had a preterm firstborn would recall more negative affect from the time of the birth than parents who had an uncomplicated perinatal experience. The overall analysis of variance suggested by a nonsignificant trend, $F(2,29) = 2.55, p < .10$, that a difference existed among groups of parents. Comparison of the PRETERM and the NORMAL DELIVERY groups demonstrated that the

former recalled significantly more negative affect at the time of the birth, $t(17.7) = 2.93$, $p < .005$, one-tailed.

The question was also asked whether mothers who suffer perinatal illness recall more negative affect from the time of the birth of their first child than mothers who had an uncomplicated delivery. PRETERM mothers had a mean score of 27.29, MATERNAL ILLNESS mothers had a mean score of 21.67 and NORMAL DELIVERY mothers had a mean score of 12.50.

The overall analysis of variance suggested by a non-significant trend that a group difference existed, $F(2,14) = 2.91$, $p < .09$. While the difference between MATERNAL ILLNESS and NORMAL DELIVERY mothers was not significant, $t(5.6) = 1.76$, *ns*, a significant difference was found between PRETERM and NORMAL DELIVERY mothers, $t(7.3) = 3.86$, $p < .003$, one-tailed. As had been found for mother and fathers together, PRETERM mothers recalled significantly more negative affect than NORMAL DELIVERY mothers.

There was a significant positive correlation, $r(15) = .74$, $p < .001$), between mothers' scores at five years and those obtained two years earlier. At three years a similar 7 point scale was used and five of the feeling states were the same as those used in the current assessment. A high score again indicated that more negative affect was

recalled. At three years PRETERM mothers had a mean score of 18.57, MATERNAL ILLNESS mothers had a mean score of 16.50 and NORMAL DELIVERY mothers had a mean score of 11.33.

A group difference was suggested by a nonsignificant trend in the overall analysis of variance, $F(2,13) = 3.09$, $p < .08$. Again the difference between MATERNAL ILLNESS and NORMAL DELIVERY mothers was not significant, $t(2.4) = 1.81$, *ns*, but PRETERM mothers were significantly more negative in their affective recollections at three years than NORMAL DELIVERY mothers, $t(4.3) = 2.15$, $p < .05$, one-tailed.

The results on parents' affective recollections of the perinatal period are summarized in Table 3.

Parents were also asked to recall five years later their first reactions to each of their children. Their responses were scored to reflect the ratio of negative to positive adjectives used to describe their first reactions. This ratio was then converted to a decimal. PRETERM parents had a mean score of .45, MATERNAL ILLNESS parents had a mean score of .12 and NORMAL DELIVERY parents had a mean score of .13.

Table 3

Parents' Affective Recollections of the Perinatal Period

TIME OF RECALL	GROUP			<u>F</u>	<u>p</u>
	PRETERM	MATERNAL ILLNESS	NORMAL DELIVERY		
Five Years ^a					
<u>M</u>	23.46	17.91	15.25	2.55	.10
<u>SD</u>	8.81	10.49	3.88		
Mothers Only					
<u>M</u>	27.29	21.67	12.50	2.91	.09
<u>SD</u>	9.57	12.40	2.52		
Three Years ^b					
<u>M</u>	18.57	16.50	11.33	3.09	.08
<u>SD</u>	5.26	2.07	4.73		

Note. A high score indicates more negative affect was recalled.

^aScores are based on seven affective dimensions.

^bScores are based on five affective dimensions.

Hypothesis 2 predicted that parents would recall more negative first reactions to infants born preterm than to those born at term. The overall analysis of variance indicated a significant group difference, $F(2,29) = 6.90$, $p < .004$. PRETERM parents were found to have significantly more negative recollections of the first reaction to their first-born child than NORMAL DELIVERY parents, $t(18.7) = 3.30$, $p < .002$, one-tailed. PRETERM parents also had significantly more negative recollections than MATERNAL ILLNESS parents, $t(22) = 3.09$, $p < .003$, one-tailed.

It was anticipated that PRETERM parents who had not had another preterm infant would be no more negative in their recollections of first reactions to later born children than other parents. However, the overall analysis of variance of first reactions to the second born child did by a nonsignificant trend suggest a group difference, $F(2,14) = 2.77$, $p < .09$. Nonsignificant trends toward differences prevailed in posthoc comparisons of the PRETERM and the MATERNAL ILLNESS groups, $t(4) = 2.33$, $p < .08$, and of the PRETERM and the NORMAL DELIVERY groups, $t(5) = 2.20$, $p < .08$. These differences were in the direction of more positive reactions by PRETERM parents, none of whom reported anything negative about their first contact with a second-born child. Mean scores for first reactions to a second

born child were .00 for PRETERM parents ($n = 6$), .16 for MATERNAL ILLNESS parents ($n = 5$) and .15 for NORMAL DELIVERY parents ($n = 6$).

Only six families had a third child five years following the birth of their first child. The two PRETERM parents in this subgroup again reported only positive first reactions to this child.

The results on parents' first reactions to their children are summarized in Table 4.

Another group of analyses was performed to determine whether differences would be evident in parents' self-ratings of their competence. Parents' were asked for self-perceptions of their competence at various points in time. Using a 7 point scale they rated themselves on four dimensions. Recalling their competence at the time of their first child's birth parents scores ranged from 4 (low self-rating of competence) to 27 (high self-rating of competence). PRETERM parents had a mean self-rating of 20.45, MATERNAL ILLNESS parents had a mean self-rating of 21.00 and NORMAL DELIVERY parents had a mean self-rating of 19.63.

Table 4

Ratio of Negative to Positive Adjectives in Parents' Descriptions of
First Reactions to their Infants

INFANT	GROUP			<u>F</u>	<u>p</u>
	PRETERM	MATERNAL ILLNESS	NORMAL DELIVERY		
Firstborn					
<u>M</u>	.45	.12	.13	6.90	.004
<u>SD</u>	.28	.24	.15		
Second born					
<u>M</u>	.00	.16	.15	2.77	.08
<u>SD</u>	.00	.15	.17		

Hypothesis 3 predicted that parents of preterm infants would recall feeling less competent during the perinatal period than parents whose infants were born without complication. Neither the overall analysis of variance, $F(2,23) = .12$, *ns*, nor the comparison between the PRETERM and the NORMAL DELIVERY groups, $t(17) = .32$, *ns*, supported this hypothesis.

The question was also asked whether mothers who suffer perinatal illness recall feeling less competent during the perinatal period than mothers who delivered without complication. The overall analysis of variance was not significant, $F(2,11) = .49$, *ns*. Nor did MATERNAL ILLNESS mothers rate themselves lower than NORMAL DELIVERY mothers, $t(5.8) = .42$, *ns*.

In comparing mothers and fathers with each other, the difference in recollections of competence at the time of their firstborn's birth was not significant, $t(23.19) = 1.55$, *ns*. Mothers had a mean score of 18.93 and fathers had a mean score of 22.00.

A two-way analysis of variance was performed to test differences between parents within each group. The overall interaction between group membership and sex of parents was not significant, $F(2,20) = 2.22$, *ns*. There were also no

significant differences between MATERNAL ILLNESS mothers ($M = 19.50$) and fathers ($M = 23.00$), $t(3) = 1.29$, *ns*, nor between NORMAL DELIVERY mothers ($M = 21.00$) and fathers ($M = 18.25$), $t(5.92) = .80$, *ns*. However, there was a nonsignificant trend for PRETERM mothers to view themselves as less competent than PRETERM fathers at the time of the birth, $t(6.26) = 2.28$, $p < .06$. PRETERM mothers had a mean score 17.67 and PRETERM fathers had a mean score of 24.40.

A nonsignificant trend toward a difference among groups of fathers was also found, $F(2,9) = 3.89$, $p < .06$. The posthoc comparison indicated that the largest difference was between PRETERM and NORMAL DELIVERY fathers, $t(4.1) = 2.21$, $p < .09$.

Parents' retrospective competence ratings at the time of the birth are summarized in Table 5.

On the whole, parents gave themselves higher competence ratings with the passage of time. The mean score for all parents which reflected their recollection of the time of the birth was 20.35, while the mean score for all parents when their child had reached the age of five was 25.84.

Table 5

Parents' Recollections of Competence during the Perinatal Period:
Means and Standard Deviations

	GROUP		
	PRETERM	MATERNAL ILLNESS	NORMAL DELIVERY
Mothers			
<u>M</u>	17.67	19.50	21.00
<u>SD</u>	7.31	5.45	4.55
Fathers			
<u>M</u>	24.40	23.00	18.25
<u>SD</u>	2.41	.00	5.21

Note. A higher score indicates recollection of greater competence.

Comparison of mothers' and fathers' competence ratings at five years showed virtually no difference, $t(29.09) = .12$, *ns*. Mothers had a mean score of 25.88 and fathers had a mean score of 25.80. Within group comparisons of parents also tended to vary by only a few percentage points at this time.

Approximately half of the parents in the study ($n = 15$) felt that the characteristics of a good father were different than those of a good mother. Mothers and fathers were equally well represented among the parents who listed differences, $t(29.36) = .67$, *ns*. The remaining parents ($n = 17$) listed no differences in their perception of the characteristics of a good mother or a good father.

A third group of analyses are of the data on fathers' involvement with their children. Involvement was considered to have a number of dimensions and was assessed in several ways. One measure of involvement was fathers' participation in infant care during the hospital stay, as observed by hospital staff and recorded in the mother-infant medical chart. Fathers and mothers were also asked to retrospectively rate their feelings of involvement during the perinatal period and at various other points in time. Finally both fathers and mothers were asked to describe by percentages their

responsibility, relative to that of their spouse, for basic child care activities (e.g., feeding, bathing, dressing) during infancy and at the current time.

Hypothesis 4 predicted that fathers whose wives experienced illness but whose infants were uncompromised were more involved in infant care and felt more involved with their infants during the perinatal period than other fathers.

The overall analysis of variance of the data in the hospital chart did not support this hypothesis $F(2, 14) = 1.98$, *ns*. The comparisons between MATERNAL ILLNESS and NORMAL DELIVERY fathers, $t(9.2) = 1.28$, *ns*, and MATERNAL ILLNESS and PRETERM fathers, $t(7.2) = .66$, *ns*, were also not significant. Rather, there was a nonsignificant trend for PRETERM fathers to be more involved than NORMAL DELIVERY fathers, $t(6.3) = 2.01$, $p < .09$. Analysis of nurses' subjective comments about fathers' participation at this time yielded no significant group differences, $F(2,14) = 1.24$, *ns*.

Using a scale ranging from 1 ("very uninvolved") to 7 ("very involved") fathers were asked to recall their feelings of involvement during the perinatal period. PRETERM fathers had a mean score of 5.83, MATERNAL ILLNESS fathers

had a mean score of 6.60 and NORMAL DELIVERY fathers had a mean score of 5.75. The overall analysis of variance showed no significant difference among groups, $F(2, 12) = .62$, *ns*. However, comparison of MATERNAL ILLNESS and NORMAL DELIVERY fathers indicated that the former felt significantly more involved, $t(6.8) = 2.43$, $p < .02$, one-tailed. The comparison between MATERNAL ILLNESS and PRETERM fathers was not significant, $t(5.9) = .92$, *ns*.

In an attempt to elucidate the contradiction between the greater involvement of PRETERM fathers based on the data in the hospital chart and the higher feelings of involvement of MATERNAL ILLNESS fathers, the independent participation of fathers was compared with that performed simultaneously with mothers across groups. A significant difference emerged in the overall analysis of variance, $F(2,14) = 4.17$, $p < .04$. The posthoc comparison indicated that MATERNAL ILLNESS fathers were significantly more likely to have been independently involved with their child during hospitalization than PRETERM fathers, $t(8.5) = 3.13$, $p < .01$. NORMAL DELIVERY fathers were not significantly different from either of the other two groups. The results on paternal involvement during the perinatal period are summarized in Table 6.

Table 6

Paternal Involvement with Preterm, Maternal Illness and Normal Delivery
Infants during the Perinatal Period

MEASURE	PRETERM	MATERNAL ILLNESS	NORMAL DELIVERY	<u>F</u>
Hospital chart data ^a				
<u>M</u>	2.30	1.31	.97	1.98
<u>SD</u>	1.52	1.13	.51	
Fathers' recalled feelings				
<u>M</u>	5.83	6.60	5.75	.63
<u>SD</u>	1.95	.55	.50	
Ration of independent to shared parental involvement during hospitalization				
<u>M</u>	.44	1.78	1.30	4.17*
<u>SD</u>	.56	.89	.98	

^aScores reflect the amount of paternal involvement in a uniform time period.

* $p < .05$

The literature suggests that having a baby by Cesarean section might influence fathers' involvement and feelings of involvement. Therefore analyses of covariance with the variable of Cesarean birth as the covariant were performed. Cesarean birth did not have a significant influence on fathers' involvement as assessed by the nursing staff, $F(1,12) = .07, ns$. Cesarean birth also did not have a significant effect on fathers' feelings of involvement, $F(1,10) = 1.78, ns$. In the latter analysis, the significant difference between fathers in feelings of involvement prevailed, $F(2, 10) = 5.90, p < .02$.

Analyses were also performed to establish the level of paternal involvement during the first six months. When fathers were asked to recall their responsibility for specific child care tasks during the first six months at home, there was no significant difference among the three groups of fathers, $F(2,12) = 1.60, ns$. PRETERM fathers rated themselves on the average as having had 29% of the responsibility for basic child care tasks during the first six months, MATERNAL ILLNESS fathers rated themselves as having had 16% of the responsibility and NORMAL DELIVERY fathers rated themselves as having had 19% of the responsibility. There was also no significant difference in the mothers' assessment of their spouses' responsibility, $F(2,14) =$

1.43, *ns*. PRETERM mothers rated their husbands' participation at 26%, MATERNAL ILLNESS mothers rated it at 14% and NORMAL DELIVERY mothers rated it at 20%.

While the overall analysis of variance of feelings of involvement at six months was not significant, $F(2,9) = 1.96$, *ns*, the posthoc comparison indicated that PRETERM fathers felt significantly more involved at six months than did NORMAL DELIVERY fathers, $t(6.8) = 2.32$, $p < .05$. PRETERM fathers had a mean score of 6.60, MATERNAL ILLNESS fathers had a mean score of 6.00 and NORMAL DELIVERY fathers had a mean score of 5.75. MATERNAL ILLNESS fathers were not significantly different from either of the other two groups of fathers in their retrospective ratings of feelings of involvement at six months. The results on paternal involvement at six months are summarized in Table 7.

Analyses of covariance were again performed to assess the roles of Cesarean birth and breastfeeding at six months. There was again no significant effect of Cesarean birth on fathers' ratings of their responsibility for child care tasks, $F(1,10) = .33$, *ns*, nor on the ratings supplied by their wives, $F(1,12) = .38$, *ns*.

Table 7

Paternal Involvement with Preterm, Maternal Illness and Normal Delivery
Infants at Six Months

MEASURE	PRETERM	MATERNAL ILLNESS	NORMAL DELIVERY	<u>F</u>
Fathers' assessment of their responsi- bility for child care as percent of total responsibility				
<u>M</u>	29	16	19	1.60
<u>SD</u>	13	12	10	
Fathers' recalled feelings				
<u>M</u>	6.60	6.00	5.75	1.96
<u>SD</u>	.55	1.00	.50	

Fathers of exclusively breastfed infants were not significantly different in responsibility for child care by their own assessment, $F(1,11) = .59$, *ns*, nor by that of their wives, $F(1,13) = .30$, *ns*, from fathers of babies who were bottlefed at least part of the time. Whether or not a firstborn child was breastfed also did not appear to have a significant effect on fathers' feelings of involvement during the first six months, $F(1,8) = .79$, *ns*. In this analysis the difference among groups of fathers in recollection of feelings of involvement at six months was not evident, $F(2,8) = 2.35$, *ns*.

Finally fathers' involvement when their firstborn sons had reached the age of five was analyzed. Focus on fathers' involvement at five years demonstrated that the groups of fathers were not differentiated by their own assessment of responsibility for child care tasks $F(2, 12) = .77$, *ns*, nor by their wives' report of their responsibility, $F(2, 14) = .59$, *ns*. PRETERM fathers rated themselves as assuming responsibility for 38% of the tasks at five years, MATERNAL ILLNESS fathers rated themselves at 32% and NORMAL DELIVERY fathers rated themselves at 28%. Mothers rated their spouses as assuming 37% (PRETERM group) 29% (MATERNAL ILLNESS group) and 30% (NORMAL DELIVERY group) of the responsibility at five years.

Fathers' feelings of involvement in the daily lives of their firstborn sons showed a significant group difference at five years. Using a scale ranging from 1 ("hardly involved at all") to 5 ("maximally involved") the mean score for PRETERM fathers was 4.0, that for MATERNAL ILLNESS fathers was 3.6 and that for NORMAL DELIVERY fathers was 3.0. The overall analysis of variance was significant, $F(2, 12) = 3.89, p < .05$, as was the post hoc test which demonstrated that the greatest difference was between PRETERM and NORMAL DELIVERY fathers, $t(8.0) = 3.04, p < .02$. There was also a nonsignificant trend for MATERNAL ILLNESS fathers to feel more involved than NORMAL DELIVERY fathers, $t(7.0) = 1.89, p < .10$.

There were no significant differences among fathers in responsibility for child care for all children in the family five years after the birth of the first child, $F(2, 12) = .69, ns$. However the overall analysis of variance once again indicated a significant difference when groups of fathers were compared on their feelings of involvement in the daily lives of all their children, $F(2, 12) = 3.89, p = .05$. Posthoc comparisons demonstrated that PRETERM fathers felt significantly more involved than NORMAL DELIVERY fathers, $t(8.0) = 3.04, p < .02$, and there was also a nonsignificant trend for MATERNAL ILLNESS fathers to feel more

involved than NORMAL DELIVERY fathers, $t(7.0) = 1.88$, $p < .10$. The analysis of variance of general feelings of involvement as parents also demonstrated a nonsignificant trend toward a difference between fathers in the PRETERM and NORMAL DELIVERY groups in the posthoc test, $t(7.0) = 2.24$, $p < .06$, although not in the overall test, $F(2,12) = .54$, *ns*. The results on paternal involvement at five years are summarized in Table 8.

To provide a context for assessing fathers' involvement data were also collected on various aspects of mothers' involvement with their firstborns. The difference in parents' recollections of their feelings of involvement at the time of the birth was not significant, $t(30) = .36$, *ns*. However there was a highly significant difference in mothers' and fathers' recollections of feelings of involvement as parents when their first child was six months old, $t(11) = 4.02$, $p < .002$. While fathers' scores ranged from "slightly involved" to "very involved", all 14 mothers who responded to this item rated themselves as "very involved" at the time their first child was six months old.

Table 8

Paternal Involvement with Preterm, Maternal Illness and Normal Delivery
Infants at Five Years

MEASURE	PRETERM	MATERNAL ILLNESS	NORMAL DELIVERY	<u>F</u>
Fathers' assessment of their responsi- bility for current care of firstborn son as percent of total responsibility				
<u>M</u>	38	32	28	.77
<u>SD</u>	9	15	13	
Fathers' feelings of involvement in daily life of firstborn son				
<u>M</u>	4.00	3.60	3.00	3.89*
<u>SD</u>	.63	.55	.41	

*p < .05

Again when the children in the study were five years old their fathers on the average considered themselves to be less involved parents than the mothers. This was true for both feelings of involvement in the daily lives of their firstborn children, $t(24.95) = 5.39$, $p < .001$ and for general involvement as parents, $t(30) = 2.32$ $p < .03$.

Self-ratings of feelings of involvement are mirrored by parents' ratings of their own and their spouses' responsibility for child care tasks. Fathers on the average rated themselves as having had responsibility for 22% of basic child care tasks and their wives as having had 78% responsibility when their first child was six months old. Mothers on the average rated themselves as having had 77% responsibility and their spouses as having had 23% responsibility.

Responsibility for basic child care needs of the firstborn child at the age of five was assessed by fathers on the average as 33% theirs and 67% that of their wives. Mothers on the average again offered a similar assessment of responsibility: 65% as their own and 35% as that of their spouses. Responsibility for care of all children in the family at this time was evaluated on the average by fathers as 32% theirs and 68% that of their spouses. Mothers concurred with an average breakdown of 66% their responsibility

and 34% that of the fathers. The self-reported differences between mothers and fathers in responsibility for child care are all significant at the $p < .001$ level.

The high degree of similarity between parents' responses in these areas was initially thought to indicate some unavoidable coordination of responses when parents completed the questionnaire at home. However, as the 11 couples who both completed the questionnaire at home differed on the average by 9 percentage points in their responses and the 3 couples in which mothers and fathers had separate interviews differed on the average by 10 percentage points, it seems unlikely that the opportunity to confer with their spouse had a significant impact.

There is some evidence that consistency in parents ratings occurred not only between mothers and fathers but also within families across time. On the 18 Month Questionnaire identification by mothers of fathers as the most likely nonmaternal caregiver during the first 18 months was highly positively correlated at five years with involvement by fathers in child care while mothers worked, $r(15) = .71$, $p < .002$.

A positive correlation between fathers' involvement and self-ratings of competence was also postulated.

Fathers' ratings of their competence and their feelings of involvement at the time their firstborn son was five were highly positively correlated, $r(15) = .58, p < .02$. The correlation was not significant when fathers' self-assessment of competence was compared with self-assessment of responsibility for child care at five years. The positive correlation between fathers' ratings of competence at five years and their recalled feelings of involvement when their firstborn was six months old approached significance, $r(12) = .57, p < .06$. While the correlations for other groups of fathers taken independently were not significant, for PRETERM fathers the correlation between ratings of competence and recalled feelings of involvement at the age of six months was even stronger, $r(5) = .98, p < .004$. Again, the correlation was not significant when competence ratings at five years were compared with recalled responsibility for child care tasks at six months for all fathers or when broken down by groups.

The nature and longevity of parents concerns about their children were also of interest in this investigation. When their children had reached the age of five parents of preterm infants were found not to differ from parents of term infants in the total number of concerns they had $F(2, 29) = .08, ns$, nor in the frequency of physical $F(2, 29) =$

.19, *ns*, or social-emotional $F(2, 29) = 1.03$, *ns* concerns. At five years PRETERM parents had an average of .39 physical concerns, MATERNAL ILLNESS parents had a average of .36 physical concerns and NORMAL DELIVERY parents had an average of .25 concerns. PRETERM parents had an average of .54 social-emotional concerns, MATERNAL ILLNESS parents had an average of .82 social-emotional concerns and NORMAL DELIVERY parents had a average of .63 social-emotional concerns at this time. The results on parents' concerns at five years are summarized in Table 9.

Groups of mothers did not differ in the total number of concerns they had reported at three years, $F(2, 13) = .78$, *ns*, nor in the frequency of physical $F(2, 13) = .77$ *ns*, or social-emotional $F(2, 13) = .05$, *ns* concerns. PRETERM mothers on the average had .29 physical concerns at that time, MATERNAL ILLNESS mothers expressed no physical concerns and NORMAL DELIVERY mothers had .25 physical concerns. At three years PRETERM mothers had .28 social-emotional concerns, MATERNAL ILLNESS mothers had .20 social-emotional concerns and NORMAL DELIVERY mothers had .25 social-emotional concerns. The results on mothers' concerns at three years are summarized in Table 10.

Table 9

Concerns of Parents of Preterm, Maternal Illness and Normal Delivery
Infants at Five Years: Means and Standard Deviations

CONCERN	PRETERM	MATERNAL ILLNESS	NORMAL DELIVERY
Physical			
<u>M</u>	.39	.36	.25
<u>SD</u>	.51	.51	.46
Social-Emotional			
<u>M</u>	.54	.82	.63
<u>SD</u>	.52	.41	.52
Total Concerns ^a			
<u>M</u>	1.92	1.91	1.75
<u>SD</u>	1.04	.94	1.17

^aAlso includes concerns in other categories.

Table 10

Concerns of Mothers of Preterm, Maternal Illness and Normal Delivery
Infants at Three Years: Means and Standard Deviations

CONCERN	PRETERM	MATERNAL ILLNESS	NORMAL DELIVERY
Physical			
<u>M</u>	.29	.00	.25
<u>SD</u>	.49	.00	.50
Social-Emotional			
<u>M</u>	.28	.20	.25
<u>SD</u>	.49	.45	.50
Total Concerns			
<u>M</u>	.57	.20	.50
<u>SD</u>	.54	.45	.58

More detailed examination of parents' concerns at five years uncovered an area of concern to the parents of preterm infants which other parents apparently did not share. Three parents of preterm infants but no others noted a concern that their child would be learning disabled. Two of these parents explicitly linked this concern to their son's preterm birth. In doing so they were like other parents of preterm infants who identified their concerns at five years as related to the circumstances of their child's birth. PRETERM parents differed from other parents in that almost half of them identified their concerns at five years as related to the circumstances of their child's birth, $F(2,29) = 7.38, p < .003$. Significant differences were present between PRETERM and MATERNAL ILLNESS parents, $t(12) = 3.2, p < .008$ and also between PRETERM and NORMAL DELIVERY parents, $t(12) = 3.2, p < .008$.

Several other findings emerged when the data collected from parents when their children had reached the age of five were compared with those collected from mothers when the children were three years old. Parents in all groups now articulated a greater number of concerns, a mean of 1.88 vs. a mean at three years of .44. At the age of three years 10 mothers had responded that they had no concerns about their son. At five years only two parents had no particular con-

cerns about their son. While mothers of three-year-olds were equally as likely to list concerns about physical as they were about social-emotional development, when the children reached the age of five parents across all three groups had more social-emotional ($M = .66$) than physical ($M = .34$) concerns.

It was also anticipated that a group by sex interaction might be evident in increased participation by PRETERM fathers, who presumably had greater reason for concern than other fathers, in the periodic evaluations of their children as part of the Infant Development Project. There was no support for this, neither when fathers' participation was measured over the first year of their child's life during which time there were more frequent evaluations scheduled, $F(2, 15) = .31, ns$, nor over the course of the five years of the Infant Development Project, $F(2, 15) = .06, ns$.

The final question asked was whether parents consciously identify perinatal factors as playing a role in their relationships with their children. There was no statistical support for this in that only one parent, a father of a preterm infant, identified the circumstances of his son's birth as providing the unique basis for the relationship with his son. In this father's elaboration it became

clear that the time around the birth of his son held a special salience in that this child was actually a second born. A first son had also been born preterm and did not survive the first postnatal day.

CHAPTER V

DISCUSSION

Four directional hypotheses concerning group differences were proposed in the current study. Two of these were clearly supported, the third was not supported and the fourth received partial support. Other differences among parent groups and between mothers and fathers became apparent in post hoc tests. The latter findings require a particularly cautious interpretation and may be most useful heuristically. Replication of the predicted and the post hoc findings in future studies with other subjects would more firmly establish their validity.

As the findings are discussed certain other considerations should be kept in mind. First, the current study involved a very small number of participants. These parents and their children born at term and preterm represent a tiny fraction of the families who use the maternity services at a Chicago-area suburban hospital. While they are demographically representative of this population, their willingness to be research participants may mean that they are somewhat

different, in subtle ways, from other families with young children. In addition, there may also be not so subtle differences in the form of benefits which these families have derived as a result of their five years of participation in the Infant Development Project. Possible implications of their research participation are given further attention below.

While external validity may to some extent have been enhanced by a larger sample size, this study presented a unique opportunity to gather and analyze extensive data on a smaller sample. It was possible to combine information collected for the current investigation, previously gathered questionnaire data and archival data to obtain a rich understanding of the families who participated in the study.

The likelihood of finding statistically significant group differences may also have been reduced by the sample size. The small number of statistically established differences are supplemented below with further anecdotal evidence. Through this material the experience of the subjects was often clarified and directions for future research were suggested.

The retrospective nature of some of the data obtained in the current study must also be addressed. Where these

data are based exclusively on subjective recall it must be considered that results obtained at the time might have differed to a greater or lesser extent. Archival data and asking subjects to assess the participation of their spouse provided some check on parents' recollections. No data are available to check parents' recall of feelings of competence and involvement at various points in time. However, retrospective data may be most problematic from a research perspective. In the context of the ongoing parent-child relationship, the veracity of recollections may be far less important than their content.

Affective Recollections

The first hypothesis predicted that parents who had preterm infants would recall more negative affect from the time of the birth than parents who had an uncomplicated perinatal experience. It was found that five years following the birth of a preterm infant parents did recall significantly more negative affect from the time of the birth than parents of term infants. While parents were asked for their recollections on a number of uniform and pre-established dimensions one mother of a preterm infant also detailed her feelings on the questionnaire. When her son was born following a 28 week gestation this woman experienced "very

mixed feelings at the birth of a preemie. No flowers came to the hospital at the preemie birth. None of us knew whether to be happy for a birth or sad for a "might die". Married to a medical professional and herself highly educated, this woman also recalled feeling more fearful for her son's survival because "I know the statistics--that females are stronger."

The feelings and concerns of this mother and her family contrast sharply with the wonder and "engrossment" new parents typically experience following a medically uneventful term birth. Yet as the results of this and other studies indicate, even parents who give birth to a healthy infant are likely to experience some more negative feelings. In this study the negative affect of these parents tended to consist of feeling some, but not great amounts, of anxiety and/or worry at the time of the birth of their first child.

That more negative affect was recalled by the parents of infants born preterm is consistent with the findings of studies conducted during the perinatal period. There is also evidence that it may be important for the parents of preterm infants to be aware of the negative feelings. Caplan et al. (1965) found that a "healthy outcome" in family relationships was more likely to result two months after

the discharge of an infant born preterm if the parents showed "a continuous awareness of negative feelings throughout the crisis."

It is noteworthy that the negative affect of the current sample of parents was clearly remembered five years following the birth of the child. That no major fluctuation in the affect recalled had taken place, at least for mothers of preterm infants within the past two years, is suggested by the positive correlation between recalled affect at 36 months and at five years.

Neither at three years nor at five years following the birth of their first child were mothers who had suffered perinatal illness significantly more negative in their affective recollections from the time of the birth than healthy mothers who also had healthy infants. It had been anticipated that ill mothers who were separated from their infants might experience alienation and resentment as a result of the separation, as did mothers of preterm infants studied by Pederson et al. (1987). While there did not appear to be similarly negative recollections of the perinatal period at follow-up, nursing staff progress notes made during the perinatal period record the experience of negative affect at that time.

Three of the six mothers in this group were described in the progress notes as "depressed" because they were unable to handle their infants. A fourth mother was described six days postpartum as "much relieved" to have the baby with her. One of the mothers who on the fourth day postpartum had been described as depressed, on the next day was reported to say, "I feel fine. Can I hold my baby and feed him formula? I feel like he's bonding to the nursery crib!"

Two sick mothers who breastfed were able to watch as the expressed milk was fed to their infants in the Rooming In Nursery. One of these mothers was described as feeling "somewhat better" when the baby was visible through glass even if no other contact was permitted.

Another mother who had reported to the nursing staff that she felt "depressed because I can't handle the baby" also recalled extremely negative feelings five years later. Her spontaneous elaboration on events during the postpartum hospitalization was that "the nurses got excited (at her symptoms) and I thought I might die. I couldn't see the baby for three days."

The apparent disparity for most mothers who suffered perinatal illness between personal recollections of the perinatal period and observations made by another person at

that time requires some attention. As the statistical test of the difference in recollection of affect was in the direction of ill mothers being more negative in their recollections than healthy mothers, this may be an instance where a greater number of subjects would have yielded a significant result. It may also be that the adjectives which mothers were required to use in their recollections did not adequately allow ill mothers to express themselves. For example, the nurses tended to describe their patients as "depressed" but this was not a choice available to the mothers for self-description.

Alternately it may be that a true difference exists linked to perinatal experience. The fear of the mother who thought she might die notwithstanding, the lives of the ill mothers were not objectively threatened and all were discharged by nine days after giving birth. While the perinatal illness may have been very difficult both physically and emotionally for these women, it was relatively short. Once they had recuperated and become involved in the demands of caring for their infants these women may have quickly distanced themselves from their earlier negative feelings. Conversely, not only were their hospitalizations longer, the appearance and delayed rate of development of preterm infants may serve as salient reminders of the perinatal experience for some months to come.

The second hypothesis predicted that parents would recall more negative first reactions to infants born preterm than to those born at term. Parents of preterm infants were found to describe their first reactions to their infant in significantly more negative terms than parents of term infants, whether or not there had been maternal medical complications. On the average, parents of preterm infants tended to recall reactions which were almost as likely to be negative as positive. While they had felt "excited" and "proud", they as often reported having felt "scared" and "apprehensive". One father qualified that his son "looked good for his early birth" while a mother described her infant as "fragile, thin, tiny and helpless." One mother recalled that she was too afraid to hold her preterm son when he was first offered to her while another mother recalled that her first reactions was to feel "nervous--because it was in the intensive care nursery--but motherly". These responses seem clearly to indicate the ambivalence described by Lamb et al. (1979).

In contrast, one father of a term infant qualified that his first reaction included "a small amount of apprehension". One mother described her new son as "handsome" while a father described his infant as "fine and healthy". The feeling of "immortality" recalled by one father as part

of his first reaction to his son contrasts most sharply with the "fear" of the mother whose preterm infant was at that time (two hours after birth) given "a 50-50 chance to live".

As noted above, when parents of preterm firstborns later gave birth to term infants they outdid other parents by having no negative recollections of their first reactions to these children. They experienced "joy" and found the experience to be "easy". One mother was "anxious to relate to (her second baby) and to have it at home" while another mother who had been "scared" during the first contact with her preterm son effusively described her reaction to the first contact with her term second child as "neat, wonderful, cozy and warm--we breastfed--a positive experience!"

The meaning of these positive reactions should be considered. At least in the case of one mother's comment that she "finally got the hang of it" when a term birth followed a preterm birth, there is the sense that she felt responsible for the failure of the first pregnancy which did not go to term as well as for the success of the one which followed. This would seem to be in keeping with the feelings of guilt parents reportedly experience following a preterm birth (Johnson, 1979).

While parents in the current study did not explicitly state that they felt to blame for the first infant's preterm birth, "relief" was the most frequently reported of their globally positive reactions to the later term infant. Their relief may not only have been that the baby was okay but perhaps also a broader sense that they were not again to blame for a failure. One might imagine that this feeling would be stronger for mothers than for fathers. Future research might test this as well as investigate the experience of parents who do not have a term uneventful birth following a preterm one either because they choose not to have another child or because subsequent pregnancies are also at risk for a premature end.

Three of seven families who had a preterm first child had not had another child five years later. Two mothers who were at risk for another preterm delivery had been confined to bed for the last months of pregnancy and then gave birth at term. These numbers are too small to allow further investigation in the current study, however it should be recalled that there was a nonsignificant trend for parents of preterm infants to have smaller families than parents who had term infants and uneventful first births. In addition to the three infants born preterm who were only children at the age of five, only one other child, whose mother had

experienced perinatal illness, had no siblings five years later. These small numbers tentatively suggest that parents' perinatal experiences may not only affect the way future births and new infants are perceived but also perhaps the decision to have other children.

Parental Self-Ratings of Competence

The third hypothesis predicted that parents of preterm infants would recall feeling less competent during the perinatal period than parents of infants who were born without complication. However, there was no indication that five years later these parents as a group recalled having felt significantly less competent than parents whose infants were born without complication.

There are methodological factors which might explain why the current sample of parents of preterms, in comparison with those studied a decade ago at Stanford University (Leifer et al., 1972), had less reason to develop a similarly diminished sense of their competence as parents. Parents of preterm infants in this study were permitted greater contact with their infants than the mothers in the Stanford University study who showed the lowest self-confidence ratings. Those mothers had only been allowed visual contact with their infants and no participation, as it

became possible, in the feeding and other routine aspects of their infants' care. Not only were parents in the current study allowed greater contact with their infants, they may even have been encouraged to maximize their contact by members of the nursing staff who were aware that these parents and infants were involved in a "bonding study". At the time that this sample of infants was born (in 1979 and 1980), Klaus' and Kennell's (1976) findings of an apparent "maternal sensitive period" during which it was crucial for parent-infant bonding to take place, held great weight (D.L. Holmes, personal communication, Fall, 1984). Nevertheless, parents were at best able to touch and after a time feed their infants while critical medical care was provided by the special care unit staff.

Goldberg and Marcovitch (1986) note that in addition to the intensive care nursery environment in which the contact takes place, parents of preterm infants have to cope with the appearance and lack of responsivity of their infants. These factors might also be expected to have an effect on parents' feelings of competence.

In further examination of the data it became evident that combining the data of mothers and fathers masked a non-significant trend toward fathers of preterm infants rating

themselves higher in competence at the time of the birth than mothers of preterm infants. There was also a nonsignificant trend for these fathers to have rated themselves as higher in competence than other fathers in the study.

While this is a tentative finding it is of great interest that fathers of preterm infants rated themselves as highly as they did. It might have been predicted that as a result of gender role socialization, which would have afforded men in the study less prior contact with infants than women in the study, the men would have rated themselves lower in competence than their wives as they first embarked upon parenthood. This pattern might even be more accentuated with parents of preterm infants who appear and often are more difficult to care for than other newborns. Yet the results obtained suggest that only for healthy term infants are fathers' scores even in the direction, although not statistically so, of being lower than mothers.

The need to present themselves as competent may be in response, as Holmes et al. (1984) suggest, to a perception of their wives as needing support and reassurance at that time. Further support for this idea is offered by Herzog (1982), who conducted retrospective psychoanalytically-oriented interviews with a sample of men whose wives gave

birth preterm. He found that those men who had been rated as emotionally well attuned to their wives during the pregnancy reported that after the preterm birth their wives "needed more" from them and in fact that these men "parented" their wives. Thus the current sample of fathers of preterm infants may have been indicating that they felt competent at being supportive to their wives rather than in direct involvement with their infants. It is also possible that the fathers' responses were influenced by their own need to appear competent as suggested by Redshaw et al. (1985).

The relationship between mothers' and fathers' feelings of competence and the event of preterm birth may be clarified in future research by asking parents to describe each others' and their own role expectations during the perinatal period.

There was no significant difference in recollections of feelings of competence at the time of the birth when mothers who had suffered perinatal illness were compared with mothers who had delivered without complication. It is possible that the mothers who were ill and could not handle their infants may have felt less competent during the perinatal period. However as was suggested above, it may be

that these feelings quickly dissipated as they were able to assume responsibility for their infants' care.

On the average parents recalled feeling quite a bit less competent at the birth of their first child than they do five years later. Just as mothers and fathers across groups rated themselves similarly during the perinatal period, five years later they were again highly similar in their self-ratings of competence. There were no significant differences between parents within groups at five years.

Fathers' significantly lower involvement in the daily tasks of child care, which both mothers and fathers agreed upon, did not appear to have an impact on their perceptions of themselves as competent parents at five years. As a group, fathers felt themselves to be as skillful, successful, effective and confident in their parenting as did their wives. It was thought that the positive self-evaluations of the fathers in the face of less involvement in the day to day tasks of parenting might be explained by focusing on the parental role conceptualizations of this sample of parents.

The Parent Questionnaire asked the subjects to identify "some of the characteristics you believe it is important for a good mother/father to have". Responses to this item were analyzed quantitatively but are perhaps of greater qualitative interest.

Across groups those parents who viewed a good father as having different characteristics than a good mother appeared to have a more narrow conceptualization of the good father role. It appeared as if these parents' expectations for fathers' involvement with their children were lower and that the characteristics expected of fathers tended to be more specific. For example, one mother responded, "most fathers are not around as much as mothers so it's important when they get home for them to play with the kids as much as possible." Specific paternal responsibilities which were listed included providing "discipline" and "firmness" and the opportunity for "physical contact" and "rough play". Interestingly, two fathers but no mothers felt that it was important for a good father but not for a good mother to be "fair". In contrast, a good mother was seen as needing to be "unselfish", "flexible", "patient", "attentive" and "to feel closeness" to her children. These appear to be more global characteristics.

When these findings are combined with those of the other half of the sample who saw the roles of mothers and fathers more similarly (i.e., good father characteristics like those of good mothers were more global), they appear to validate what Biller (1984) and others (e.g., (Feldman & Nash, 1986) have reported. Today it is acceptable for

fathers' participation with their young children to be either narrowly or broadly defined. Fathers who participate in either manner may feel good about their parenting skills. A task for future research might be to consider whether a more broadly construed view of the characteristics of a good father actually translates to greater involvement in a variety of child care tasks.

Several factors other than the way parental roles are defined or experience as parents may contribute to the current positive self-assessment of parents in this study. The existence of a mutually reinforcing relationship between parents' feelings of competence and their continued participation in the Infant Development Project is postulated. It seems likely that the experimental mortality rate would be higher for subjects who did not feel good about their parenting ability. On the other hand, the periodic assessments of their children and contact with the developmental psychologists who are the principal investigators of the Infant Development Project would seem to be reinforcing for the participants. Particularly the parents of preterm infants would seem to benefit from assurance of the progression of their child's development through standardized assessments and the opportunity to discuss concerns with the psychologists.

The process of recruiting subjects from the Infant Development Project for the current study suggests anecdotally that the parents of infants born preterm feel greater loyalty to the project, perhaps as a result of what they feel they have gained by their participation, than other parents. There were eight families contacted for each of the three groups in the current study. Only one family with a preterm infant did not agree to participate in the current study. Four parents of preterm infants, as opposed to none from families which had experienced maternal illness and only two from families which had uneventful first births, made the more time-consuming choice of being interviewed rather than completing the questionnaire. Two families who had since the birth of their preterm infant moved out of state were still in periodic contact with the project investigators and were willing to participate in the current study by mail. In contrast, two families who had experienced maternal illness and three families with uneventful births did not participate. These were families who had also dropped out of the Infant Development Project.

Paternal Involvement

A number of interesting findings about father involvement during infancy emerged in the current study. The

fourth hypothesis predicted that fathers whose wives suffered perinatal illness but whose infants were uncompromised would be the most involved in infant care and would also feel more involved than other fathers during the early postnatal period. Analysis of the data collected by hospital personnel indicated that fathers of preterm infants were the most involved during the early postnatal period but the results self-reported by the fathers indicated that those with term infants whose wives were ill felt themselves to be the most involved during that time.

The apparent contradiction may be attributable to a number of factors, first of which to be considered is the nature of the hospital data. These data were gathered from hospital records, which were obtainable for all but one subject family, but nevertheless varied greatly in content and detail of the information recorded. Most but not all charts of preterm infants had detailed accounts of parental visitation to the infant special care unit. This suggests that there was some variability in adherence to the request of the investigators of the Infant Development Project that visitation be documented. It is unclear whether the staff responsible for infant care in the other nurseries and maternal recovery were aware of the Infant Development Project and/or whether they had been given special instructions

about what to record. However, it appeared that data on term infants and their parents were more sparsely recorded. That less archival data were available on these families may have colored the results obtained.

Individual differences in style of reporting among members of the nursing staff further influenced the content of the charts across all three groups. While some staff members made only minimal notations or focused exclusively on aspects of physical recovery, others made often more subjective comments which addressed fathers' participation as one aspect of recovery. Analyses were run both with and without inclusion of these subjective comments about fathers' participation.

Inclusion of the comments did not result in statistically significant group differences however it did highlight the experience, including certain similarities, of individual families in all three groups. When one couple arrived at the special care nursery for the first postpartum visit with their infant, it was recorded that the mother was "apprehensive" and the father was "very supportive". A father who frequently came to visit his son in the intensive care nursery was described as "handling baby well". A mother who was unable to have contact with her infant

because of her illness was described as "depressed about her condition however accepting and receiving support from spouse". Another father whose wife was ill was described as "eager to assist with baby care" during the nine day hospitalization. A mother who had given birth without complication for herself or her infant was described as "unsure of self when handling baby--depends on husband for assistance with baby care".

A further influencing factor would seem to be the way that the hospital chart data were coded in the current study. All forms of fathers' involvement with their infants during hospitalization were noted including such activities as feeding, visiting, signing consents and making phone calls to check on the progress of an infant in the intensive care nursery. Each instance of paternal involvement was added to provide a total for that father. Coded in this fashion, even with statistical control for the longer hospital stays of preterm infants, the amount of involvement of the fathers of preterm infants remains greater.

However the involvement of fathers of preterm infants may further have differed qualitatively from that of other fathers. While the data are limited, they suggest that there may have been more unspecified visiting and phone

calls and less caregiving by these fathers. This may be attributable to both the physical status of their infants and to the fact that they tended to visit the special care unit in the company of their wives; only one father of a preterm infant had frequent independent contact with his son.

This is in distinct contrast to the fathers of healthy infants with ill spouses. These men had the opportunity for and on the average availed themselves of significantly more independent contact with their infants than other fathers. Again, the data are limited but they suggest that these fathers were also more likely to feed their infants during their independent contacts. Given the prominent role feeding plays in the care of a newborn, this would seem to intensify the feelings of involvement these fathers experienced during the perinatal period.

In further contrast it may be that much of the contact which the fathers of preterm infants had with their children while they were hospitalized actually highlighted their sense of distance from their newborns. In the majority of their visits they saw hospital staff and complicated machinery providing the essential aspects of the infant's care. Then, when it became possible to participate in the care of

their infant, the mothers may have been particularly eager to begin behaving in a "maternal" fashion--i.e., by providing care--thereby precluding greater paternal participation in caregiving.

Another apparent contradiction presented itself in the data on fathers' recalled involvement in the first six months of their sons' lives. There was now no difference across groups in fathers' own ratings of their responsibility for child care tasks nor in that supplied by their wives. However, fathers of preterm infants on the average recalled feeling significantly more involved than did other fathers.

The reason for these feelings is unclear. The results at six months were in the direction, although not statistically so, of greater responsibility for child care by fathers of preterm infants in comparison with other fathers. It may be that a greater number of subjects would have demonstrated a group difference in responsibility which might explain the difference in feelings of involvement. As the questionnaire data on responsibility for child care tasks were quantitatively rather than qualitatively analyzed it may also be that item analysis of specific tasks would have provided a fuller understanding of the quality in addition

to the quantity of the fathers' involvement. Finally, as the questionnaire had asked that parents describe their relative responsibility for a predetermined list of child care tasks, it may be that these fathers would attribute their heightened feelings of involvement to some aspect of involvement with their children which was not assessed in the current study.

The transactional model suggests that fathers may have felt more involved at six months than they had at the birth of their preterm infants because of change in the characteristics of the infants. Many of the initially aversive characteristics which typify the preterm infant had likely disappeared and their children had likely become easier to interact with and care for. Father-son interaction may thus have had the opportunity to become more normative.

For example, there may have arrived at six months a greater readiness on the part of fathers and sons to engage in play. The earlier fear and reluctance of parents of an at risk infant to play with their infant which Holmes et al. (1984) have described would likely have begun to wane. In addition, the infant's physiological regulation over the course of the first six months would likely by now have resulted in the available energy to become interested in

play. After the stress of the early weeks and months, having a "partner" capable of some reciprocal involvement may then intensify the feelings of involvement and pleasure which fathers of infants born preterm, and surely mothers too, experience.

The results also indicate that by six months there was a drop in the feelings of involvement recalled by fathers whose wives had suffered perinatal medical complications. It appears plausible that once they had recovered physically there was a strong desire on the part of these mothers, as there may have been on the part of mothers separated from their preterm infants, to assume an active caregiving role. This would have the effect of diminishing the need and the opportunity for fathers to continue to play as active a role as they had. Similarly as in the case of greater paternal participation in child care following a Cesarean birth described by Pedersen (Kabatnick, 1984), these fathers may have seen themselves as "helping out" for a period of time while their wives were ill and also more or less readily relinquished their active role when their wives had recovered. In fact being less involved at six months than they had been during the perinatal period may have led them to feel less involved.

For the current sample of fathers the variable of Cesarean birth appeared to play no role in paternal involvement with their infants during the immediate postnatal period nor at six months. Breast feeding also did not appear to play a significant role in determining the amount of fathers' involvement nor in the recollection of fathers' feelings of involvement during the first six months.

The small sample size may have worked against finding significant effects of these variables. Alternately, it may be that the fathers of exclusively breastfed infants participated more than other fathers in other aspects of their child's care so that overall involvement was equivalent. It may also be that this is an area in which the passage of time plays a role. Fathers who are currently involved in other ways with their children may no longer recall, or have perhaps repressed because they seemed unacceptable, feelings of being left out and uninvolved during the time that their infants were exclusively breastfed.

The findings on father involvement five years after the birth appear to be similar to those recalled from the age of six months. While on the average all fathers now assume greater responsibility for child care, as at six months there were no differences between groups of fathers

in their own assessments nor in those of their wives in percentage of responsibility for child care tasks. Again as in the six month ratings, the fathers of children who had been preterm infants rated themselves as feeling significantly more involved with their firstborns than did other fathers.

Further results obtained suggest that the feelings of involvement with this child may positively influence a fathers' relationship with subsequent children. Fathers of preterm firstborns indicated on two measures that they felt significantly more involved with all of their children at the present time than did the fathers of children born at term without complication. Fathers of term infants with ill spouses also showed a trend toward feeling more involved in the lives of all their children than fathers of children born without complication. Once again the groups of fathers differed only in their feelings of involvement and not in assessment of percentage of responsibility for child care tasks when their involvement with all their children was considered.

The findings on father involvement may be summarized as follows. With one exception there were no group differences in ratings of involvement by others nor in fathers' own ratings of responsibility for child care up to five

years after the birth. This exception was the nonsignificant trend toward a difference between groups of fathers in involvement during the postnatal period as assessed by the nursing staff. This trend favored the fathers of preterm infants, however, biasing factors in the hospital data reduce the impact of this finding. It appears that qualitative and subjective aspects of fathers' involvement reveal more about the families' experience than quantitative ones.

Some consistent patterns emerged in fathers' ratings of feelings of involvement at various points in time. Fathers of term infants with ill spouses recalled feeling significantly more involved during the early postnatal period than fathers whose infants had been born without complication for mother or infant. There was also a nonsignificant trend for this comparison to prevail in terms of fathers' feelings of involvement in the current daily lives of all their children.

Fathers of infants born preterm also considered themselves more involved at various points in time than fathers whose children were born at term without complication. The fathers of preterm infants recalled feeling significantly more involved at six months and again when their sons had reached the age of five they reported significantly greater

feelings of involvement in the daily life of their firstborn than other fathers. Five years after the birth they also reported feeling significantly more involved in the daily lives of all their children and there was a nonsignificant trend for them to feel more involved in their current overall role as parents.

Different factors are likely at work which resulted in the fathers of preterm infants or those with term infants and ill spouses recalling greater feelings of involvement at various times. One important factor may be how fathers in these groups construed their roles during the perinatal period. Nevertheless the groups are similar in that both recalled heightened feelings of involvement at times during the first year and also at five years, thereby suggesting some longevity to the influence of their early experience as fathers. Also in both cases, although more clearly seen with the fathers of preterm infants, feelings of involvement with the firstborn appear to have generalized to the relationships with subsequent children or to overall feelings as a parent.

It is of interest that at no time do the fathers of infants born without maternal or infant complication rate themselves as feeling more involved than other fathers. The

consistency of this finding suggests a difference in the father-child relationship when there is some type of crisis, be it infant or maternal, during the perinatal period, in comparison with an uncomplicated delivery. In the event of an uncomplicated delivery at term there appears to be less of a need and a less of a place for heightened paternal participation in most families. Fathers who do nonetheless become highly involved may be unlikely to do so without an explicit reason such as a commitment to parental shared caregiving.

Parke and Tinsley (1984) concluded their discussion of father involvement during infancy by wondering whether increased participation in infant care, even if short-lived, would result in greater willingness to assume responsibility for child care at a later time. The current results also do not provide an answer to this question. However, it may be that the fathers who reported feeling highly involved with their children would be willing to assume greater responsibility for child care should family circumstances necessitate their doing so. At the current time in all families mothers were clearly the primary caregivers as was reflected in both their own and their husbands' assessments of relative responsibility for child care and in all but the first rating of feelings of involvement. In that rating during

the perinatal period mothers and fathers on the whole recalled equivalent feelings of involvement.

The positive correlation between fathers' feelings of involvement and ratings of competence, which was stronger for the fathers of preterm infants than for other fathers, suggests that these feelings may be mutually reinforcing. In combination they may influence the extent to which fathers are involved with their young sons, which may in turn have some influence on the children's development.

A number of studies (e.g. Lamb, 1981; Radin, 1973; Radin, 1982; Spelke, Zelazo & Kotelchuck, 1973) have shown that children's cognitive and social development may be positively affected by high levels of father involvement. This involvement may be particularly beneficial when, as following preterm birth, there exists the possibility of some developmental difficulties. As has already been noted, periodic evaluation of the children born preterm in the current study has demonstrated that they have made remarkable gains and do not appear to be permanently damaged by their early birth. Some aspect of their fathers' involvement, which was not evident in the behaviors assessed but is suggested by these fathers' generally higher feelings of involvement, may have played a role in this positive outcome.

The one exception to the consistently higher feelings of involvement of the fathers of preterm infants was during the perinatal period. Possible reasons for the lower feelings of involvement at this time were suggested above. If these fathers were able to play a less directly involved but supportive role during the perinatal period this may also have been of benefit to their children. Minde et al. (1978) found a lower incidence of mother-child difficulties at follow-up if the father had been supportive during the perinatal period.

Another contributing factor to the level of paternal involvement with preterm infants may be family size. The fathers of preterm infants may have reported greater feelings of involvement in part because of the trend for them to have fewer children at follow-up. This is in keeping with the results of at least one study (Peterson, Mehl & Leiderman, 1979) which found a general trend of decreasing father attachment to their infants with increasing parity. As there were three families of preterm infants who at follow up had only one child, Toman's (1976) finding of greater parental involvement with an only child may also be relevant.

Parental Concerns and the Parent-Child Relationship

Five years following the birth of a preterm infant parents on the average appeared to have no greater number of concerns about their child's wellbeing and development than parents whose children were born at term and without complication. This may be viewed positively in an obvious sense in terms of the children's development and according to one model (Caplan et al., 1965) in terms of parent-child relationships. At three years the mothers of infants born preterm also admitted to no greater number of concerns than other mothers.

While the current data do not indicate quantitative differences there do appear to be both process and some qualitative differences in the concerns of parents of the children born preterm. Approximately half of the parents of infants born preterm were likely to attribute whatever concerns they currently had to the circumstances of the child's birth. They made clear this connection by statements both general--"I worry because he was early"--and specific--"I'm concerned that he doesn't trust and doesn't try new things because of his early experience"--in nature.

There also appeared to be a clear temporal connection between the children in the sample being of the age to start

school and the nature of parents' concerns. For parents of preterm infants a concern about learning disabilities manifested itself which had not been articulated by the mothers of these children two years earlier. One father fairly typically expressed concern that his son "not have any residual side effects from his premature birth--especially learning disabilities and medical problems". He noted further that "in view of (his son's) excellent medical evaluations and continued positive academic evaluations these concerns are lessening." While this father appears to be making progress toward an appropriate perception of his son and his abilities, the salience of the preterm birth experience is still felt in that his concerns have not been entirely set to rest.

Although one father of a term infant expressed concern about his son's "unknown academic ability" and a mother of a term infant was concerned about her son's "mental development as an only child", it was only the parents of infants born preterm who noted a specific concern about learning disabilities. As Brotherson, Turnbull, Summers and Turnbull (1986) have noted, such concerns may make the start of school a stressful time for parents of an actually or feared disabled child.

The start of school may also cause many parents to wonder whether they have adequately prepared their child to negotiate the extrafamilial world. Across groups parents appeared at this time to be most concerned about their child's social-emotional development. One mother of a child born preterm wrote, "My main concern is in regard to his social skills and ability to form friendships." Another mother of a term infant wrote, "I'm concerned that he learns to socialize, share and be patient."

Physical concerns tended to be second most prevalent across groups when children had reached the age of five. Some parents' concerns were more global such as those of the mother who gave birth at term and was concerned about her son's "health and wellbeing" or the father who expressed concern that his son, born preterm, "grows up strong and able to take care of himself." Other parents appear to have concerns about their children's physical safety in certain situations. One mother of a child born preterm noted that "control is a concern. I have to judge the situation and not just let him do it because he wants to." A father of a son born preterm echoed, "He's very athletic--I'm concerned about physical harm to him because of his activity."

The finding that parents on the average have a greater number of concerns now than they did at three years is also of interest. It may be that as children get older, parents find more to be concerned about, whether or not there may have been particular cause for initial concern.

From their conscious responses it does not appear that as their children get older parents identify the events of the perinatal period as continuing to play a role in the parent-child relationship. As noted above, only one father of a preterm infant made clear the significance which the circumstances of his son's birth continued to hold for their relationship. For other parents it appears that if perinatal factors continue to play a role in the parent-child relationship, as is suggested by other results obtained, they do so indirectly and perhaps on an unconscious level.

CHAPTER VI

SUMMARY

The current study sought to investigate influences over time of perinatal variables. Answers were sought to various questions about how preterm birth and maternal perinatal illness might continue to influence parents' affective experience over time. This experience was in turn considered to have implications for family relationships and in particular for the development of infants born preterm.

The results offered clear support for the idea that the birth of a preterm infant remained affectively salient for parents. Five years later the parents of preterm infants distinctly recalled more negative affect from the perinatal period than did other parents. Similarly they recalled more negative first reactions to their children born preterm. While these and other findings based on parents' recall are open to the criticism of possible distortion over time it may be that it is the very subjective nature of parents' recollections which are of greatest import for the parent-child relationship.

It was suggested by the current results that another way the preterm birth of a first child might remain salient is in its influence on family size. There was a nonsignificant trend after five years for families with a preterm firstborn to be smaller than other families. When parents of preterm infants did have other children born at term, unlike those of most parents of term healthy infants, their reported first reactions to these infants were entirely positive.

Mothers who had suffered perinatal illness appeared to be no different from other mothers in their affective recollections of the perinatal period. In fact there was no indication that perinatal illness played a measurable role in any of the areas which mothers themselves reported on. However, nursing staff notes indicate that mothers who experienced illness and separation from their infants during the perinatal period experienced negative affect at that time.

The relationship between parents' group status and their recollections of competence at the birth of their first child was not as straightforward as had been anticipated. Parents of preterm infants did not recall feeling less competent during the perinatal period than parents of term infants. However, there were nonsignificant trends for

fathers of preterm infants to recall feeling more competent at the time of the birth than both their wives and other fathers. It may be that these fathers adopted a perception of themselves as competent at parenting during the perinatal period in response to their wives' need for them to be supportive and reassuring. It may also be that they construed their parental role during the perinatal period as being supportive to their wives and their responses indicate that they felt competent at being supportive. This distinction may be clarified in future research.

The anticipated positive correlation between paternal involvement and feelings of competence was found when feelings of involvement were considered. It would seem to follow that father-child relationships would flourish when fathers feel highly involved with their children and feel they are competent at carrying out their parental tasks. However the results of the current study also suggest that fathers can feel they are competent parents if they are less involved with their sons on a daily basis. This seems to support the idea that the "good father" role may today be defined in a number of ways.

One intent behind the focus on father involvement was to determine whether any consistent patterns would emerge.

There appeared to be some consistency in fathers' feelings of involvement. Fathers from both of the groups which experienced perinatal complications retrospectively reported heightened feelings of involvement during infancy and also indicated greater feelings of involvement with their children at five years of age.

The contribution of retrospective recall to data which appear to support a finding of consistency over time requires a cautious interpretation. However, aspects of fathers' actual participation in child care, reported separately, offer some additional support for this finding. Based on data in the hospital charts, fathers whose wives suffered perinatal illness had significantly more independent involvement with their infants during the perinatal period than other fathers. This would appear to be consistent with heightened feelings of involvement during the perinatal period.

Fathers of preterm infants recalled significantly greater feelings of involvement when their infant had reached the age of six months than other fathers. This may be attributable to an interaction between infant characteristics and fathers' behavior. While the fathers of preterm infants may also have been involved in infant care to a

greater extent than the results indicate, perhaps it was not until their infants began to appear and respond more normatively that they actually felt more involved.

Parents of preterm infants were found not to be different from other parents in the total number of their concerns at five years nor in the number of their concerns which fell into the physical and social-emotional categories. They were different in the frequency with which they attributed their concerns, even those qualitatively similar to those of other parents, to the fact of the preterm birth. Some parents of infants born preterm also expressed a concern about learning disabilities which other parents apparently did not share. That qualitative differences exist, at least for some parents, suggests another way that the preterm birth continues to remain affectively salient.

The current study sought to understand the experience of mothers and fathers who differed in the circumstances which accompanied their becoming parents. The results suggest that perinatal events continue to play a role in parents' feelings over time and by extension in their relationships with their children. Less was revealed about how parents' behavior may vary over time as a function of perinatal experience.

It may be that with the passage of time other factors become more influential in determining parents' behavior in such areas as their involvement with their children. Yet the difference in parents' feelings--particularly those of fathers in the current study--suggests that the absence of differences in behavioral indices of involvement could also be a function of the chosen method of investigation. The questionnaire/interview with its longitudinal and in part retrospective format may be most useful in providing information about parents' broader affective experience. This information may in turn have greater relevance for the quality than the quantity of parental behavior.

It can be argued, as do Parke and Tinley (1983), that gathering this type of data represents the most appropriate research emphasis "in light of the extensive literature that shows that the quality of parental behavior rather than quantity is a better predictor of child outcome (p. 240)." A more balanced approach suggests that microanalytic techniques (e.g., laboratory observation or study of brief parent-child interaction sequences) designed to quantify parents' behavior might provide an interesting complement to the current findings. Additional recommendations for future research include prospective study of parents' affective experience and more direct focus on how the parental rela-

tionship influences both parents' affective experience and by extension their children.

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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