Parents' perceptions of their older child's behavior in response to the birth of a sibling

Jean Naismith Gullicks

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Gullicks, Jean Naismith, Ph.D.

Iowa State University, 1989
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These consist of pages:

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Infant Expectations Inventory
Parental Self-Expectations Inventory

133-136 and 145-148
Broussard's Infant Perception Inventory
Broussard's Degree of Brother Inventory
Infant Observation Inventory
Parental Self-Observations Inventory
Parents' perceptions of their older child's behavior in response to the birth of a sibling

by

Jean Naismith Gullicks

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### TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEDICATION</td>
<td>vi</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td>2</td>
</tr>
<tr>
<td>Operational Definitions</td>
<td>3</td>
</tr>
<tr>
<td>Hypotheses</td>
<td>5</td>
</tr>
<tr>
<td>REVIEW OF LITERATURE</td>
<td>7</td>
</tr>
<tr>
<td>Theoretical Analysis of Sibling Relationships</td>
<td>7</td>
</tr>
<tr>
<td>Separation from Mother and Reactions to the Newborn Sibling</td>
<td>12</td>
</tr>
<tr>
<td>Developmental Changes: Newborn through Preschool</td>
<td>14</td>
</tr>
<tr>
<td>Sibling reactions to newborns</td>
<td>15</td>
</tr>
<tr>
<td>Sibling reactions to infants</td>
<td>19</td>
</tr>
<tr>
<td>Sibling reactions to preschoolers</td>
<td>23</td>
</tr>
<tr>
<td>Classical Research on Sibling Relations</td>
<td>25</td>
</tr>
<tr>
<td>Pertinent Longitudinal Studies</td>
<td>25</td>
</tr>
<tr>
<td>METHODOLOGY</td>
<td>29</td>
</tr>
<tr>
<td>Purpose</td>
<td>29</td>
</tr>
<tr>
<td>Subjects</td>
<td>29</td>
</tr>
<tr>
<td>Subject Selection</td>
<td>30</td>
</tr>
<tr>
<td>Data Collection Procedure</td>
<td>31</td>
</tr>
<tr>
<td>Instruments</td>
<td>32</td>
</tr>
<tr>
<td>Iowa Parent Behavior Inventory (IPBI)</td>
<td>33</td>
</tr>
<tr>
<td>Sibling Behavior Inventory</td>
<td>33</td>
</tr>
<tr>
<td>Older Child Expectations Inventory, Time 1 and</td>
<td>34</td>
</tr>
<tr>
<td>Older Child Observations Inventory, Time 2</td>
<td>34</td>
</tr>
<tr>
<td>Broussard Infant Perception Inventory, Time 1 and Time 2</td>
<td>34</td>
</tr>
<tr>
<td>Broussard Degree of Bother Inventory</td>
<td>34</td>
</tr>
</tbody>
</table>
Infant Expectations Inventory, Time 1 and 35
Infant Observations Inventory, Time 2 35
Parental Self-Expectations Inventory, Time 1 and 35
Parental Self-Observations Inventory, Time 2

Data Analysis 36

RESULTS AND DISCUSSION 39

Ancillary Findings 68

Limitations of the Study 77

SUMMARY 78

IMPLICATIONS FOR FUTURE RESEARCH 83

REFERENCE LIST 85

ACKNOWLEDGEMENTS 91

APPENDIX A: QUESTIONNAIRE PACKET, TIME 1 93
APPENDIX B: QUESTIONNAIRE PACKET, TIME 2 125
APPENDIX C: GENERAL EQUATIONS FOR BEHAVIOR INVENTORIES 153
LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>Theoretical framework of parental behaviors and sibling relationships</td>
<td>11</td>
</tr>
<tr>
<td>Figure 2</td>
<td>Comparison of the responses between mothers' expectations (ME) and observations (MO) of sibling behaviors on the Older Child Expectations/Observations Inventory</td>
<td>41</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Comparison of the responses between fathers' expectations (FE) and observations (FO) of sibling behaviors on the Older Child Expectations/Observations Inventory</td>
<td>42</td>
</tr>
<tr>
<td>Figure 4</td>
<td>Comparison of the responses between mothers' expectations (ME) and fathers' expectations (FE) of sibling behaviors on the Older Child Expectations/Observations Inventory</td>
<td>52</td>
</tr>
<tr>
<td>Figure 5</td>
<td>Comparison of the responses between mothers' (FM) and fathers' (FF) observations of sibling behaviors on the Sibling Behavior Inventory, Time 1</td>
<td>55</td>
</tr>
<tr>
<td>Figure 6</td>
<td>Comparison of the responses between mothers' observations (MO) and fathers' observations (FO) of sibling behaviors on the Older Child Expectations/Observations Inventory</td>
<td>57</td>
</tr>
<tr>
<td>Figure 7</td>
<td>Comparison of the responses between mothers' (SM) and fathers' (SF) observations of sibling behaviors on the Sibling Behavior Inventory</td>
<td>59</td>
</tr>
<tr>
<td>Figure 8</td>
<td>Comparison of the responses between mothers' expectations (MIE) and observations (MIO) of newborn behaviors on the Infant Expectations/Observations Inventory</td>
<td>63</td>
</tr>
<tr>
<td>Figure 9</td>
<td>Comparison of the responses between fathers' expectations (FIE) and observations (FIO) of newborn behaviors on the Infant Expectations/Observations Inventory</td>
<td>64</td>
</tr>
<tr>
<td>Figure 10</td>
<td>Comparison of the responses between mothers' observations, Time 1 (FM) and mothers' observations, Time 2 (SM) of sibling behaviors on the Sibling Behavior Inventory</td>
<td>69</td>
</tr>
</tbody>
</table>
Figure 11. Comparison of the responses between fathers' observations, Time 1 (FF) and fathers' observations, Time 2 (SF) of sibling behaviors on the Sibling Behavior Inventory

Figure 12. Comparison of the responses between mothers' expectations (MSE) and observations (MSO) of their own behavior on the Parental Self-Expectations/Observations Inventory

Figure 13. Comparison of the responses between fathers' expectations (FSE) and observations (FSO) of their own behavior on the Parental Self-Expectations/Observations Inventory
DEDICATION

To my husband, Harvey, and our sons, Donnie and Grant, whose love, patience, and sacrifices have made both family life and professional growth possible and fulfilling.

To my parents, Dr. Donald Naismith and Shirley Naismith, for their love, encouragement, faith in me, and interest in all projects that I have ever undertaken.

To my grandpa, M. R. Naismith, for his love and pride in me.

To my sisters and their families, Laurie Berg and Dr. Jonathan Berg, Margo and Kent Bergene for their love and support throughout the difficult times.

To my dear friend, Sally Pyle, for her confidence in me and her enduring friendship.
INTRODUCTION

Children in the United States grow up in a family consisting of parents, grandparents, other relatives, and friends. Of these children, 80% have siblings (Dunn, 1983). Before a second child is born, the older child has already had to make adjustments for the new sibling. The prospect of sharing parents can set the scene for jealousy and sibling rivalry. Contrary to the beliefs of most people, although sibling conflicts do occur, generally they are within the context of positive relationships between the children (Lamb, 1982). Legg, Sherick, and Wadland (1974) noted that parents' attitudes towards the arrival of a newborn in the family set the stage for the older sibling's reaction to the new addition.

The importance that other family members may play in the child's development has been largely neglected. It is well-known now that focusing only on the parent-child dyad or mother-father-child triad is misleading. To explore the bases of continuity in any one dyadic relationship within a family, it is clear that not only that dyad, but the responses of other family members to both members of the dyad must be studied (Stillwell & Dunn, 1985). Families are complex social systems and the significance of influences within the family need to be recognized (Clarke-Stewart, 1978; Duvall, 1977; Lewis & Rosenblum, 1979). Siblings often become closely attached to one another due to the length and intensity of their relationship (Hobson-Flake, Robinson & Skeen, 1983).
Beginning in the 1980s, researchers began to view sibling relationships as major avenues for the development and socialization of young children (Brody & Stoneman, 1982; Hobson-Flake et al. 1983). In 1982, Zigler, Lamb, and Child included siblings in their broader and more inclusive view of variables that affect personality and social development. Unfortunately, most of the research and discussions that focus on the family still tend to deal with the three-person family. As a result, the significance that siblings play in each other's lives still remains largely unstudied (Maccoby & Martin, 1983; Stewart, 1983).

The subject of siblings as factors in the process of socialization is relatively new. None of the classical theories on personality or psychological development considered siblings important to social development (Lamb, 1982). Dunn and Kendrick (1980) noted that research in social development had dealt almost exclusively with the mother-child relationship until recently, when the father-child dyad came under study. Other than parents, the influences that teachers and peers have on children's development have been the focus of many studies, with sibling relationships virtually ignored (Lamb, 1982, Dunn & Kendrick, 1980).

Statement of the Problem

Having and being a sibling is a common experience in American homes. Since few studies have researched sibling behaviors, the present study was designed to gain insight into a first-born child's behavior before and after the birth of a newborn sibling. The main
purpose of the study is to investigate parents' perceptions of their first-born child's behavior in response to the birth of a newborn sibling.

Operational Definitions

The variables of interest were operationalized as follows:

Sibling: The term "sibling" is used to designate the first-born older child in the family.

Newborn: The term "newborn" is used in describing the newborn infant, both before and after birth.

Parent behaviors: Behaviors exhibited by the parents in relation to their older child were measured by the Iowa Parent Behavior Inventory (IPBI) (Clark, Crase, & Pease, 1986). These behaviors were identified as Parental Involvement, Limit Setting, Responsiveness, Reasoning Guidance, Free Expression, and Intimacy (Crase, Clark, & Pease, 1979) (see Appendixes A and B).

Child growth and development: Areas of development appropriate to children six years and under were measured by the Sibling Behavior Inventory which was developed for this study. These include eating, sleeping, toileting, language, play, and emotional feelings (see Appendix A).

Preparation for the birth: The sibling's preparation for the birth of the newborn (attendance at prenatal classes, discussions about the pregnancy and/or newborn, prenatal visits with their mother, reading of books on the subject, feeling the baby move in utero) were
operationalized by a set of questions within the Sibling Behavior Inventory before and after the birth of the newborn.

The birth experience: The length of hospitalization for both mother and infant and the type of birth, Cesarean or vaginal, were determined via the questionnaire. The birth experience for the sibling was operationalized by behaviors relating to visitation and contact with mother and newborn during the hospital stay.

Parental expectations: Expectations of behaviors as rated by the parents in relation to the sibling or the newborn before its birth were measured by three instruments. The Older Child Expectations Inventory, developed for this study, included sibling feelings toward the newborn, jealousy, cooperation, aggressiveness, independence, and attention-seeking. The Broussard Infant Perception Inventory behaviors included the amount of crying, feeding, sleeping, and difficulty of elimination expected for the newborn (Broussard & Hartner, 1971). The Infant Expectations Inventory behaviors included newborn adaptation to family, ease of feeding, sleeping, and temperament (see Appendix A).

Parental observations: Observations of behaviors as rated by the parents in relation to the sibling or the newborn approximately four weeks following birth were measured by three instruments. The Older Child Observations Inventory, developed for this study, included newborn behaviors of jealousy, cooperation, aggressiveness, independence, and attention-seeking. The Broussard Infant Perception Inventory behaviors included amount of crying, feeding, sleeping, and
difficulty of elimination for the newborn. The Infant Observation Inventory behaviors included infant adaptation to family, ease of feeding, sleeping, and temperament (see Appendix B).

Degree of bother of infant behaviors: The amount of bother that infant behaviors cause parents was measured by the Broussard’s Degree of bother Inventory (see Appendix B). These behaviors included crying, spitting up, sleeping, feeding, elimination, and lack of a predictable schedule (Broussard & Hartner, 1971).

Parental self-expectations: Behaviors that parents expected to display after the baby was born were measured by the Parental Self-Expectations Inventory which was developed for this study (see Appendix A). These behaviors included fatigue, need for help, time alone with family members and self, anticipation of gender of the infant, changes toward the sibling, changes in family routine, and excitement over the new infant.

Parental self-observations: Responses that parents expected to display after the infant was four weeks old were measured by the Parental Self-Observations Inventory, another measure developed for this study (see Appendix B). These behaviors included fatigue, help needed, time alone with family members and self, pleasure with gender of the infant, changes toward the sibling, changes in family routine, and excitement over the new infant.

Hypotheses

To sharpen the focus and to further clarify the study, the following null hypotheses were formulated:
1. There is no relationship between perceived behaviors of the sibling after the birth of a newborn and parental expectations prior to the birth.

2. There is no relationship between gender of the sibling and perceived behaviors of that sibling.

3. There is no relationship between age of the sibling at the time of the newborn's birth and the perceived behaviors of that sibling.

4. There is no relationship between preparation of the sibling for the birth of a newborn and the perceived behaviors of that sibling after the birth of the newborn.

5. There is no relationship between sibling contact with mother during hospitalization for the birth and the perceived behaviors of the sibling.

6. There are no differences between mothers and fathers in expectations of sibling behaviors.

7. There are no differences between mothers and fathers in their perceptions of the behavior of the sibling following the birth of the newborn.

8. There is no relationship between parents' perceptions of their own behaviors and the perceived behavior of the sibling after the birth of the newborn.

9. There is no relationship between the parents' perceptions of the newborn's behaviors before birth and the perceived behavior of the newborn after birth.
REVIEW OF LITERATURE

The review of the literature consists of the following sections: (a) Theoretical Analysis of Sibling Relationships; (b) Separation from Mother and Reactions to the Newborn Sibling; (c) Developmental Changes: Newborn through Preschool; (d) Classical Research on Sibling Relations; and (e) Pertinent Longitudinal Studies.

Theoretical Analysis of Sibling Relationships

In developing a theoretical framework to help define and better understand the sibling relationship, attempts have been made to define it within a psychoanalytic framework (Scarr & Grajek, 1982; Schachter, 1982; Schachter, Gilutz, Shore, & Adler, 1978), the realms of attachment theory (Ainsworth & Wittig, 1969; Bowlby, 1969; Dunn, 1983; Dunn & Kendrick, 1982a; Samuels, 1980), and peer relations theory (Dunn & Kendrick, 1982a; Pepler, Abramovitch, & Corter, 1981; Lamb, 1978a, 1978b). For this research, attachment theory will be addressed to help explain the special relationship that siblings have with each other.

Klaus and Kennell (1976, 1982) and Klaus (1981) defined attachment as a unique relationship between two people that is specific through time. A special attachment is the bond a mother or father forms with his or her newborn infant. They stated that attachment is critical for the survival and development of the infant. The process whereby an infant attaches to the parent is the basis for all the infant's future attachments and is the early relationship from which the child develops a sense of self. The strength and character
of this early attachment will influence the quality of all future bonds to other individuals (Klaus & Kennell, 1976, 1982; Klaus, 1981).

Bowlby (1969) has identified the following behaviors as contributing to attachment: sucking, clinging, following, crying, smiling, and later, proximity-seeking when the infant becomes mobile. He stated that the amount of attachment behavior and the conditions in which it is seen will gradually change as the infant gains more experience and becomes interested in activities and people outside the family. Bowlby (1969, 1973, 1980) emphasized that attachment figures provide children with secure bases for exploration and provide a haven of safety.

These ideas have become the basis for the most popular procedure for assessing infant-adult attachments. The Strange Situation paradigm was devised by Ainsworth and her colleagues (Ainsworth, Blehar, Waters, & Wall, 1978; Ainsworth & Wittig, 1969). Before the development of this paradigm, attachment was defined in behavioral terms such as separation protest, the amount of time spent in proximity to mothers, and the degree of positive expressions directed to mother rather than to a stranger (Campos, Barrett, Lamb, Goldsmith, & Stenberg, 1983). According to Ainsworth (1973), these measures did not adequately capture individual differences in the quality of attachment, as in whether the child appeared to be secure or insecure in the presence of his or her caretaker. In addition to better measuring quality of attachment, her situation was found to measure long-term, consistent aspects of attachment relationships. Many of
the sibling studies have used a procedure modeled on Ainsworth's Strange Situation (Ainsworth et al., 1978).

Stewart (1983), in a study of 54 sibling pairs of preschool age (30 to 58 months) and infancy (10 to 20 months) found that over half of the 4-year-olds acted quickly to comfort and reassure their younger siblings who were distressed (crying, clinging, proximity-seeking) by separation from their mother. Their actions were effective, with the babies returning happily to their play. When a stranger approached, the infants utilized their older siblings for security by moving closer and holding onto the older brother or sister. Similar results were also noted in a 1984 study by Stewart and Marvin.

In their study of 40 sibling pairs, Dunn and Kendrick (1982b) identified that infants under one year of age showed signs of attachment to older siblings. By fourteen months of age, 50 percent of the infants studied were reported to miss their older siblings when they were absent, and 36 percent went to the older sibling for comfort when distressed.

Samuels (1980) studied sixteen 22-month-old younger siblings and observed them playing in the yard of a private home. The children explored farther from their mothers and stayed away longer when the older sibling was present. Based on her observations, Samuels stated that it appeared that the relationship between siblings could have the quality of an attachment for the younger sibling.

These studies seem to suggest that the relationship or bond between siblings could be viewed as attachment as referred to by
Ainsworth (1978), Bowlby (1969), Klaus and Kennell (1982), Sroufe (1981), and Sroufe and Waters (1977). These theorists refer to the concept of a "secure base," where one child provides a "secure base" for the other, is missed when absent, and is looked to for comfort and security. Stewart and Marvin (1984) suggested that more research is necessary in order to determine if child-infant caregiving and attachment interactions are indeed a subset of sibling relationships.

A theoretical framework has been developed by this writer from the work of Klaus and Kennell (1976, 1982) and Klaus (1981) on paternal and maternal behavior and the resulting relationship with their children that Klaus and Kennell (1982) hypothesized may arise from the behavior. This framework represents the major influences on an older sibling that are present at the time of birth of a newborn and the behavioral responses that may occur as a result of having and becoming a sibling. The long-term influences that may be affected by a sibling relationship are also illustrated (Figure 1).

At the time of the birth of the newborn some of the determinants are ingrained and unchangeable, such as age and sex of the children, their ordinal position in the family, the relationship with their parents prior to the birth of the newborn, the practices of their culture, their genetic endowments and their temperament. Other determinants can be altered, such as parents' attitudes toward their children, the amount and type of preparation the sibling receives regarding the newborn, the circumstances of initial contact of the siblings, whether or not there is a separation of the siblings from
Parental Relationship with Children

**Effective caretaking**

**Severe disturbances in attachment & caretaking of parents**

**FIXED**
1. Age of sibling
2. Sex of children
3. Ordinal position in family
4. Relationship with parents before birth of newborn
5. Cultural practices
6. Genetic endowment
7. Temperament of children

**ALTERABLE**
1. Parents' attitude
2. Preparation for newborn
3. Initial contact circumstances of siblings in 1st days of life
4. First days of life, separation from or contact with parents & siblings
5. Behavior of health care providers
6. Hospital practices
7. Health of children

OLDER SIBLING

NEWBORN SIBLING

**Responses to New Sibling**
- Progressive behavior with move toward independence & mastery of tasks
- High self-esteem
- Attachment & bonding
- Interest in newborn
- Nurturance & affection
- Engrossment

**Later Influences of Sibling Relationship**
- Impact on development
- Impact on total family preferences
- Behaviors
- Peer choice
- Career choice

Figure 1. Theoretical framework of parental behaviors and sibling relationships
each other and/or from the mother, the practices and behavior of the health care providers, and the health of the children. These alterable determinants are framed with a dotted line in Figure 1.

Separation from Mother and Reactions to the Newborn Sibling

The confounding factors of separation from mother during childbirth and reactions to a newborn sibling have been researched in an attempt to clarify the issues. Many researchers have noted hostility or aggression towards the newborn, regression in some behaviors, and increased efforts to gain attention by the older child during a period following the birth of the newborn sibling (Dunn, Kendrick, & MacNamee, 1981; Field & Reite, 1984; Holmes, 1980; Legg, 1974; Trause & Irvin, 1982).

The reactions of 14 preschool first-born children who were separated from their mothers at the time of childbirth were compared to those of 17 children who visited their mothers in the hospital each day (Trause, Voos, Rudd, Klaus, Kennell, & Boslett, 1981). Observations of behaviors two to four weeks before the newborn sibling's birth were compared to those made in the home one to two weeks after the birth. Maternal responses to questionnaires were also reviewed. Ninety-two percent of the children showed an increase of at least one problem in daily routines. The largest increase in problems occurred in sleeping patterns (73%). Significant increases in problems such as temper tantrums and excessive activity were also noted. Mothers were noted to use more angry and stern commands after the hospitalization, yet their children stayed near them significantly
more. An interesting positive finding was significant improvement in eating behavior.

The visiting experiences of the children did not affect changes in their behavior after the hospitalization, but it did affect how they responded to their mothers and newborn siblings at the time of hospital discharge. Significantly more children who did not visit either ignored or avoided their mothers as they first entered the waiting room. They also ignored or responded negatively to their parents' questions of whether they liked the new baby and ignored or refused their mother's requests for a hug or kiss (Trause et al., 1981).

The findings indicated short-term distress following separation from mothers for childbirth. Mothers related separation disturbances to the presence of the newborn and to the separation from the older child at the time of birth. These disturbances were apparent one to two weeks after the birth of the newborn sibling. The observations that children stayed near their mothers significantly more after the separation, supported the mothers' perceptions and the statements of attachment theory which predicted increased attachment behaviors following separations (Trause et al., 1981).

A second study looking at 16 children's responses to separation from mother during the birth of a newborn sibling monitored behavioral and physiological responses to the separation before, during, and after mother's hospitalization (Field & Reite, 1984). During these three time periods, play was videotaped along with simultaneous
telemetry monitoring of heart rate and activity level. Nighttime sleep was monitored with telemetry as well as time-lapse videorecording. Questionnaires were filled out by parents regarding the child's sleeping, eating, and playing behaviors on nonobservation days.

Parental reports were consistent with other studies of the effects of separation on the older sibling during and after the mother's hospitalization for the birth of a newborn (Dunn & Kendrick, 1980; Dunn et al., 1981; Legg, 1974; Thomas, Birch, Chess, & Robbins, 1961; Trause et al., 1981). The siblings were reported to be more clinging and aggressive and experienced changes in eating, toileting, sleeping, and illness. It is not clear if these responses were due to the separation from mother or to the arrival of a newborn. Observations of the siblings were consistent with parental reports.

These siblings visited their mothers in the hospital and fathers were involved with their care, yet they were still distressed during the hospitalization and had many negative reactions to the newborn. The factors of maternal separation and arrival of a newborn sibling remain confounded.

**Developmental Changes: Newborn through Preschool**

All phases of growth and development undergo changes that can be related to chronological age. Many studies have focused on the influences of sibling interactions at different age levels. In order to demonstrate changes that occur across time, studies that deal with the following age groups will be discussed: sibling reactions to newborns, infants and siblings, and preschoolers and siblings.
Sibling reactions to newborns. Studies concerned with siblings and newborns have focused on the older (generally preschool-age) siblings' responses rather than on the quality of the interactions that occur between the siblings, or the behavior of the newborn (Dunn, 1983). In the United States (Legg et al., 1974), Britain (Dunn et al., 1981), and Canada (Pepler et al., 1981; Abramovitch, Pepler, & Corter, 1982; Abramovitch, Corter, & Lando, 1979), studies have shown that most children, even those who were less than two years of age, showed great interest in their newborn siblings.

The most commonly discussed behaviors that are noted in the older siblings' responses to the birth of a newborn are aggression directed at the baby, attention-seeking from the mother, regression in varying degrees, and as an alternative, progression with a move toward independence and mastery of tasks (Legg et al., 1974). Thomas et al. (1961) reported that in eighteen families with a newborn, over half of the older siblings showed disturbance over the event in the form of regressive behavior or aggression toward the newborn.

In a study by Kayiatos, Adams, and Gilman (1984), 29 mothers were interviewed by telephone about their perceptions of behavioral changes in their toddlers (age range 15 months to four years) after the arrival of their second child. Within three to six weeks after the birth of the second child, 93% of the mothers had observed one or more regressive behavior changes. Regression in eating habits (13%), in toileting (20%), in sleeping (10%), and in general behaviors such as tantrums, use of security objects, play habits, activity level and
demands on mother's time (34%) were reported by the mothers. The majority of mothers associated these regressive behaviors with the newborn's birth.

Field and Reite (1984) studied the responses of sixteen preschool children to the arrival of their newborn siblings. They stated that it was difficult to assess whether behavioral changes were due to separation from mother, changes in maternal behavior, or reactions to the newborn. The parents noted that the older sibling seemed to be more clinging, physically aggressive, have changes in sleeping, toilet habits, and amount of illness, even though the father was present and the mother was visited in the hospital. Similar responses were found in studies by Dunn and Kendrick (1981a, 1982a, 1982b).

Anderberg (1988) examined the attachment process of siblings to the newborn. Observations were made of 30 older siblings (age 17 months to 7 years) during the initial meeting with their newborn sibling. Parent interviews were also conducted. The siblings interacted more with their mothers than with the newborns. Sibling behaviors towards the newborn were categorized as acquaintance (looking, touching with fingertips, talking about or to the newborn, attempt at or actual eye contact, holding the newborn, asking to hold, touching with the whole hand, changing tone of voice) and attachment (verbal references to love for newborn, verbal references to family identity, kissing newborn, protective behavior or comments, stroking newborn) behaviors.
The youngest group of siblings (age 17 to 48 months) was the only one to demonstrate obviously negative troubled behavior, reject their mother or display jealous behaviors towards the newborn. Siblings who had formed a relationship with the newborn prenatally, for example by saying good-night to the unborn baby or feeling movement, all demonstrated attachment behaviors more frequently than acquaintance behaviors. Siblings who had experienced the death of a parent (n=1), loss of a grandparent (n=3), or loss of a pet dog (n=1) did not display any attachment behaviors and displayed fewer acquaintance behaviors. This is consistent with Bowlby's (1980) theory that future relationships may be affected by loss.

Forty first-born older siblings (age range 18-43 months with over half in the range of 23-26 months) were studied before and after the birth of a second child (Dunn & Kendrick, 1981a; Kendrick & Dunn, 1982). The data are from a longitudinal study which began in 1980. Distinct changes in behavior were noted in all of the first-born siblings in the weeks immediately following the birth of the newborn. These changes were reported by the mothers and also observed by the researchers. For many of the siblings, disturbances in behavior were accompanied by positive behavioral changes such as increased independence and interest and concern about the newborn.

The majority of the siblings showed a definite increase in the frequency of their demands for attention (n=24) and in physical attacks on their mother (n=23). Some siblings became withdrawn (n=11) and others became more clinging (n=11) or tearful (n=13) after the
arrival of the newborn. Sleeping problems increased for 11 siblings, and eight of the 26 siblings who had been toilet trained showed marked regression in that area (Kendrick & Dunn, 1982).

There was strong evidence that some of these preschoolers were very interested in and concerned about the newborn. The majority of the siblings displayed some degree of physical affection by touching, kissing, or gently holding the newborn \((n=30)\). Others constantly helped their mother with care \((n=22)\). Half of the siblings imitated the newborn's actions or noises. Twelve siblings made frequent verbal comments or references to the newborn. Often the same sibling showed both friendly and aggressive behavior towards the newborn. Twenty-one siblings frequently irritated the newborn by jostling or pinching. A few siblings showed more extreme negativism towards the newborn by hitting, squashing, or screaming \((n=8)\). Ambivalence towards the newborn was demonstrated by actions and verbal comments (Kendrick & Dunn, 1982).

Kendrick and Dunn (1982) noted three distinct changes in the patterns of mother and older sibling interactions as compared before the birth and in the first month after the newborn's arrival. The mother and sibling spent less time playing or doing things together. More time was spent in confrontation between mother and sibling after the birth. There was a change in the balance of responsibility for interacting with each other. After the birth, the sibling played a proportionately larger part in making initial contacts with the mother.
One interesting result was that the arrival of a newborn sibling affected the maternal-child interactions of first-born girls significantly more than first-born boys. Results also showed that the quality of the interactions between first-born girls and their mothers at three weeks after the birth of the newborn was related to the behavior of the siblings toward each other at fourteen months. In families where the mother and first-born girl had a high quality, intense relationship before the birth, not only were the older siblings more aggressive and hostile to the younger by the fourteenth month, but the younger siblings were also more negative to their older sisters (Dunn & Kendrick, 1981a). This finding is consistent with the results of Levy's study (1938) which showed that the closer the mother and older sibling were to each other, the more disturbing was the presence of the newborn, and the more likely that the older sibling would show overt manifestations of hostility.

Sibling reactions to infants. As noted previously, no studies are available on the newborn infant's behavior and responses to an older sibling. However, Lewis and Kreitzberg (1979) studied early differences in mother-infant interactions as a function of infant birth order and birth spacing. Observations were made in the homes of 193 3-month-old infants and their mothers. Birth-order effects were highly significant for all maternal behaviors such as vocalization, touch, look, smile, rock, kiss, and play. Except for holding and feeding, mothers of first-born children engaged in behaviors with their infants more frequently than mothers of later-born children.
Birth spacing also was found to be significant for the previously mentioned behaviors. For all of these behaviors, the birth-spacing group of infants born 19-30 months after the birth of the next older sibling received the least amount of maternal attention.

For father-infant and sibling-infant interactions, only vocalization data were available (Lewis & Kreitzberg, 1979). Paternal vocalization frequency varied significantly with birth order with a greater frequency for first-born children over later-born siblings. The frequency of sibling vocalization to the infant significantly increased with increasing ordinal position, so that second-born children received less sibling vocalization than third-born children ($t(66) = 3.48, p<.01$), and third-born children received less than fourth-born children. The data on sibling-infant interaction suggest the possibility that the increase in sibling attention may in some way compensate for the decreased parental attention that later-born siblings receive. This possibility has also been noted by other researchers (Lewis & Feiring, 1979; Rosenberg & Sutton-Smith, 1969). Siblings may have a significant effect on infants' social (Dunn & Kendrick, 1981b) and cognitive (Zajonc, 1976) development.

In the study by Lewis and Kreitzberg (1979), infant behavior patterns as a function of birth order were more varied than the patterns of maternal behavior. The major significant differences were between first-born and later-born children. First-born children vocalized more frequently than all later-born children, looked at their mothers more, smiled or laughed more, and played with objects
more frequently. The opposite pattern emerged when looking at play with people. There were significant birth-order differences. Playing with people behavior increased in frequency with increasing ordinal position. No infant behaviors were related to the birth-spacing variable (Lewis & Kreitzberg, 1979).

Studies of infants and siblings have shown that from six months of age, the interactions between infants and siblings become increasingly more frequent and more positive (Abramovitch et al., 1979; Abramovitch, Corter, & Pepler, 1980, Abramovitch et al., 1982; Dunn, 1983; Dunn & Kendrick, 1981b, 1982a; Pepler et al., 1981). These researchers all observed siblings in home settings. Lamb (1978a, 1978b) found much lower frequencies of interaction among the siblings he studied in a laboratory setting. He felt this was partially due to the novelty of the toys in the laboratory.

In a study of 54 mothers, their preschool children, and their infants in a laboratory "strange situation", Stewart (1983) found that 52% of the older siblings gave reassurance and comfort to their infant siblings when the mother was gone. The remaining 48% responded to the infants' distress by turning their backs, concentrating harder on their play, singing or talking loudly, covering their ears, or running around the room.

In this study, results were obtained on the infants' behavior toward the older siblings when a stranger entered the room. In the families of siblings who had shown signs of caring for the infant, after about two minutes of fear and wariness regarding the stranger,
the infants would approach their sibling and position themselves so that the sibling was between the stranger and themselves. The infants would then respond in a friendly manner to the stranger. In families where no caregiving behaviors were noted in the older children, none of the infants approached their older siblings when the stranger entered the room. These data contradict Lamb's (1978b) results which indicated that the infants showed no signs of attachment to their older siblings.

Lamb (1978a) observed 24 infants and their preschool-aged siblings in a laboratory setting with their parents present. Observations were made when the infants were 12 months old and again when they were 18 months olds. This longitudinal study showed that sibling-directed behavior for both the infants and the preschoolers remained remarkably stable. The infant's behavior in the first session was a better predictor of the preschooler's subsequent behavior than was the preschooler's own behavior, but the preschooler's previous behavior did not predict later infant behavior. The more sociable the infants, the more positive social behavior they elicited from their preschool siblings. In general, the role of the infant was to monitor and imitate the older sibling's behavior, while the preschoolers served as models with or without their knowledge.

Dunn and Kendrick (1981b, 1982b) looked at individual differences in the social behavior of 40 sibling pairs observed at home when the infant sibling was 8 months old and again at 14 months of age. Observations at 14 months indicated that both the infants and the
older siblings showed friendly behavior toward each other if they were of the same sex. The infants' participation between 8 months and 14 months showed a significant increase in social interaction with siblings of the same sex. In contrast, by 14 months the older children in mixed-sex pairs showed more frequent negative-aggressive behavior toward their infant siblings than they had at 8 months. These results parallel those of Lamb (1978a) and indicate that the developmental significance of the older child on the behavior of the younger sibling is established even earlier than Lamb predicted.

**Sibling reactions to preschoolers.** Some studies of preschool sibling reactions have been cited in this paper during the discussion of infants and siblings. Additional detail regarding preschool sibling interactions can be found in the studies of Abramovitch et al. (1979, 1980, 1982) and Pepler et al. (1981). These studies were limited to 28 families with two preschool-aged children. Same-sex and mixed-sex sibling pairs, in which the children were separated by a large interval of two-and-a-half to four years or a small interval of one to two years, were observed. The younger siblings' average age was twenty months. The sibling dyads were observed twice, 18 months apart.

The results indicated high levels of sibling interaction in the home. Older siblings initiated more prosocial and more agonistic behavior and younger siblings imitated more. The older boys were the most agonistic and the older girls were the most prosocial. No differences were noted between mixed-sex and same-sex sibling pairs.
These results are in contrast to those of Dunn and Kendrick (1982b). A surprising result was that no differences were noted due to the large or small age intervals.

Stillwell and Dunn (1985) followed sibling pairs, originally studied by Dunn & Kendrick in 1980 and 1982, when the older sibling was 6 years old (median age 77 months). The children and their mothers were interviewed over a four week period. Correlations were calculated between the 3-week measures of 1980 and 6-year measures and between 14-week measures of 1982 and 6-year measures. A significant positive correlation was noted between (a) the initial positive interest the first-born child had shown towards the newborn sibling at three weeks and the percentage of positive comments made by the first-born child at the 6-year interview and (b) the positive comments made by the older children when they were two- and three-year-olds and their siblings were 14 months old and their comments as 6-year-olds, as well as their mothers' descriptions of the quality of the relationship at this age. A previous comparison of mothers' descriptions of their first-born child's interest in and behavior towards the new sibling at two to three weeks with direct observation of the children had shown good agreement (Dunn & Kendrick, 1982a). Individual differences in the quality of the firstborn children's behavior towards their younger siblings showed considerable stability over a 3- to 4-year period.
Classical Research on Sibling Relations

Several current researchers (Abramovitch et al., 1982; Dunn, 1983; Dunn & Kendrick, 1982a, 1982b; Lamb, 1982; Sutton-Smith, 1982) have commented on the fact that until the late 1970s nearly all of the studies that considered siblings as subjects were concerned with the effects of sibling status. These early studies were concerned with the variables of being first-born or second-born and so forth, being far apart or close in age, and having a same-sex or opposite-sex sibling. The siblings typically were viewed as independent variables, with little or no notice of the interdimensional aspects of family life.

The most consistent theme of sibling relations studies has focused on the intelligence and eminence attributed to first-born children. The researchers noted above all agree that the classical research on birth order, sex, and spacing of siblings has done little to promote the understanding of the extent of sibling influences on each other's development. In contrast to the results of the classical studies (Brim, 1958; Koch, 1955; Levy, 1938), none of which were observational, the recent observational studies of Abramovitch et al. (1982), Dunn and Kendrick (1982a, 1982b), and Lamb (1978a), found no consistent differences among siblings in relation to age, birth interval, or sex of siblings.

Pertinent Longitudinal Studies

The longitudinal studies of Dunn and Kendrick (1980, 1981a, 1981b, 1982a, 1982b), Abramovitch et al. (1979, 1980, 1982), and
Pepler et al. (1981), are the most recent observational studies of young siblings. In the following descriptions of the studies, Dunn and Kendrick will be referred to as the British study and Abramovitch and Pepler as the Canadian study.

The Canadian longitudinal project consisted of two studies, two of same-sex sibling dyads and two of mixed-sex dyads. Data collection took approximately three years, 1979 through 1981. The 28 sibling pairs came from two-child middle-class families living in a Toronto suburb. All observations were done in the homes of the families.

The British longitudinal study consisted of observational visits at four time points: (a) during the mother's pregnancy with the second child; (b) two to three weeks after the second baby's birth; (c) eight months later; and (d) fourteen months later. The families were largely lower-middle-class and working-class and resided in Cambridge, England. All observations were done in the homes of the families.

Conclusions from the Canadian study indicated that for intervals as long as three years, the siblings spent a great deal of time interacting with one another. These interactions included a variety of behaviors. A surprising degree of prosocial behavior was present in the interactions. Not only were the siblings aggressive to one another, but they were also cooperative, helpful, and affectionate. The younger children also imitated the older ones with a high degree of frequency.
Results from the British studies were similar in that the siblings spent a great deal of time with each other and displayed a variety of behaviors. They, too, found a surprising degree of prosocial behavior in the interactions, but also reported that 21% of the sibling interactions were not mutual, in that they involved friendly behavior from one sibling and hostile from the other. The younger children frequently imitated the older ones.

Differences were also noted in the two studies. In the Canadian study, both older and younger children initiated more as they got older (18 months later), while in the British study, there was only an increase in the frequency of social behavior shown by the younger siblings. The ages of the children studied may account for these differences, as the social competence of the 3-year-olds would probably make them more interesting play partners than the infants of about 14 months (Abramovitch et al., 1979, 1980, 1982).

In the British study, it was noted that the first-born child in same-sex pairs showed an increase in positive social behavior between 8 and 14 months. This is in sharp contrast to the first-born child of mixed-sex pairs who became increasingly more negative. The most significant sex differences noted in the Canadian study were that older boys in same-sex pairs were more physically aggressive than older girls, and the girls were more prosocial than the boys. However, neither of these differences were present at the time of the second visit.
The biggest surprise was that there were no significant effects due to age interval, sex of the child, or sex of the sibling pairs in the Canadian study. The British study also found no effect due to age interval and few differences directly attributed to sex of the siblings.

Researchers involved in the sibling studies identified in this paper suggested that the frequency of interaction, the uninhibited emotional quality, the interest the siblings have in one another, the imitation in play, the evidence for teaching, and behaviors similar to those of attachment indicate the influence and strength of the sibling relationship. There is evidence that sibling interactions not only influence the later relationship between the children, but also perhaps the personality development of each individual sibling.

The number of studies of sibling relationships is very small and generalizing from the data may be hazardous. Also, most of the sibling studies, and all of the studies referred to in this paper, dealt with sibling interactions of very young children. As siblings enter middle childhood and adolescence, it is very possible that their relationship may change as new developmental phases in their lives begin (Scarr & Grajek, 1982). Although there are similarities to attachment theory, as noted, it may very well be that the sibling relationship is a special relationship, unique in and of itself.
METHODOLOGY

Purpose

The primary purpose of the present study was to investigate parents' perceptions of their first-born only child's behavior in response to the birth of a second-born sibling. The older sibling's behavior, as measured before the birth of the newborn and again at four weeks following the birth, comprised the dependent variable. Parental behaviors toward the sibling and parental perceptions of the newborn were treated as independent variables.

Subjects

Subjects were 70 parent couples (70 mothers, 70 fathers) who were expecting the birth of their second child. The siblings were 15 to 74 months of age, except for one child who was 85 months old, with a mean age of 40 months. There were 32 girls and 38 boys. Parents were: (a) attending prenatal classes at Mercy Hospital Medical Center (n = 39), a large Catholic hospital in Des Moines, Iowa; (b) attending prenatal classes or were patients at the Kansas City Women's Clinic (n = 28), a private practice clinic in Kansas City, Kansas; (c) or referred to the researcher (n = 3). Participating families were predominantly Caucasian.

Subjects from Mercy Hospital Medical Center represent a population of middle-class parents residing in the city of Des Moines and the surrounding rural areas. The parents from Kansas City Women's Clinic were middle- to upper-middle-class people residing in the suburbs of Kansas City.
Prior to initiation of the study, the Iowa State University Committee on the Use of Human Subjects in Research reviewed the project proposal and concluded that the rights of the subjects were adequately protected and confidentiality assured. Informed consent was obtained through appropriate means. The proposal was also reviewed by each institution's medical board and approval was given to collect data at these sites.

Subject Selection

Criteria for family inclusion in the sample were: (a) married couples who had only one living child at home; (b) mothers who were pregnant at the time of the initial survey; (c) child at home was six years of age or younger; and (d) voluntary participation of both parents. Families who met these criteria were subsequently assigned a family identification number.

Potential parents for the study were identified in several ways. The major group was expectant couples attending prenatal classes. Forty-six percent of those who took questionnaires returned them (n = 57). These parents listened to an explanation of the study presented by the researcher during their class, and then chose whether to volunteer for the study. The second group were expectant parents whose names were provided by the Kansas City Women's Clinic. Twenty-two percent of those interested returned the questionnaires (n = 10). These parents were contacted by phone in order to explain the study and determine if they were interested in participating. The third group consisted of referrals from people who might be
interested. One hundred percent completed the questionnaires ($n = 3$). These parents were also contacted by phone. Fifty-three percent of the couples who indicated an interest in the study and took the first set of questionnaires participated in the study.

**Data Collection Procedure**

The prenatal classes at the two institutions, two a month in Des Moines and one a month in Kansas City, were visited beginning in June, 1988, to describe the research project to the parents. These were refresher classes to prepare parents for the birth of their second child. Parents who met the criteria and who volunteered for this study were given a number-coded packet containing a parent information letter, the first set of questionnaires, and an addressed, postage-paid postcard to notify the researcher of the newborn's birthdate (see Appendix A). Mothers and fathers were requested to fill out the questionnaires independently, without consulting each other. Completed questionnaires were returned to their respective health care settings or mailed to the researcher.

For parents identified as potential subjects through the Kansas City listing and those whose names were given to the researcher, initial contact was made by telephone. The study was explained and if parents agreed to participate in the study they were mailed the same materials that those attending prenatal classes had received. These parents also were requested to fill out the questionnaires independently, without consulting each other. In addition, they were
sent a self-addressed stamped envelope in which to mail the completed forms to the researcher.

All parents were instructed to mail the postcard to the researcher the week the newborn sibling was born. Upon receipt of this notification, the researcher sent a second information letter, a thank you note, and a second set of questionnaires. This set was completed when the infant was approximately four weeks old and returned to the researcher in the self-addressed stamped envelope that was provided.

Throughout the data collection period, telephone calls were made to parents as needed for reasons relating to completion of the questionnaires. Calls were made to eleven couples who had requested the second set of questionnaires but from whom the researcher had not received their first set. Thirty couples were called to remind them to complete the second set of questionnaires. In addition, calls were made to all of the couples if the first set of questionnaires had not been received by the expected due date. All parents were receptive to the phone calls.

**Instruments**

Seven instruments were used for data collection in the present study. Along with the seven instruments, an information sheet containing demographic questions and various questions pertaining to the children's health, child care arrangements, preparation for the birth, and circumstances of the birth were used. Parents' occupations were scored using the occupational scale of the Four-Factor
Hollingshead Index of Social Status (Hollingshead, 1975). The mean for fathers' occupations was 6.6 with a standard deviation of 1.8. This indicates that fathers were employed in occupations rated in the top half of the social status scale. Mothers' occupations were not analyzed, due to the large numbers of mothers rating themselves as homemakers, ranking them in the bottom third of the social status scale. The instruments were all presented as a single questionnaire packet at two separate time periods (see Appendixes A and B).

**Iowa Parent Behavior Inventory (IPBI).** The IPBI (Crase et al. 1979) was designed to assess parent behavior. The purpose of this instrument is to study the quality as well as the quantity of parent behavior and provide a reliable and valid research tool that is easy to administer. The six factors identified on the mother form are Parental Involvement, Limit Setting, Responsiveness, Reasoning Guidance, Free Expression, and Intimacy. The five factors identified on the father form are Parental Involvement, Limit Setting, Responsiveness, Reasoning Guidance, and Intimacy. The IPBI was administered to both parents at both test times.

**Sibling Behavior Inventory.** This inventory was designed by the researcher after an extensive review of the literature. A variety of questions were asked because there is no consensus as to what behavior changes, if any, occur in the presence of a newborn sibling. The questions, developmentally appropriate for children six years of age or younger, cover areas of growth and development such as eating, sleeping, toileting, language, and play. The same questions were
asked at Time 1 and at Time 2 with the exception of those that dealt with the sibling's preparation for the birth of the newborn. The latter were restricted to Time 1.

**Older Child Expectations Inventory, Time 1 and Older Child Observations Inventory, Time 2.** These instruments were developed by the researcher and contain questions that deal with behaviors more directly involving the newborn. At Time 1, the parents were asked to rate the sibling's behaviors to the extent they expected to observe them after the baby is born. At Time 2, the parents rated the sibling's behaviors that were occurring at that time. The questions were the same at both time periods with the exception of those that dealt with behaviors related to the pregnancy, which were asked only at Time 1.

**Broussard Infant Perception Inventory, Time 1 and Time 2.** The Broussard Neonatal Perception Inventory (Broussard & Hartner, 1971) was adapted by changing the title to the Broussard Infant Perception Inventory, Time 1 and Time 2. This tool was used to assess parental expectations and actual perceptions of their newborn infant. The forms were the same at both Time 1 and Time 2 with the exception of wording pertinent to the time periods. At Time 1, the questions were in the format of "How do you expect...?" At Time 2, the wording was "How does your infant...?"

**Broussard Degree of Bother Inventory.** The Degree of Bother Scale (Broussard & Hartner, 1971) administered only at Time 2, was
used to assess the degree to which parents were bothered by certain newborn behaviors when the infant was about four weeks old.

**Infant Expectations Inventory, Time 1 and Infant Observations Inventory, Time 2.** These inventories were designed by the researcher to elicit responses that pertain to parental expectations at Time 1 or actual observations at Time 2 of their newborn infant. The questions are related to newborn needs and adaptation to the sibling.

**Parental Self-Expectations Inventory, Time 1 and Parental Self-Observations Inventory, Time 2.** These inventories, designed by the researcher, contain questions that deal with the parents expectations at Time 1 and the reality of their observations at Time 2. The questions are related to their feelings for themselves, each other, their sibling and their newborn.

With the exception of the IPBI and the Broussard inventories, the questions were developed by the researcher after a thorough review of sibling literature with some adapted from Gullicks (1981). Questions were also developed from the input of mothers and fathers who had recently had second or third infants. These parents, generally known to the researcher, were contacted by telephone and asked to help identify areas of concern they had noted in their sibling's behavior. Many of these parents attributed changes in their sibling's behavior to the arrival of the newborn. They were also asked what they expected of themselves and their newborns, thus helping to clarify and produce pertinent questions in these areas.
Dunn and Kendrick (1982b) found good agreement when comparing maternal descriptions of the first-born child's interest in and behavior toward their two- to three-week-old infant siblings with direct observation of the sibling pairs. A basic underlying assumption of this study is that parental reports will be accurate.

**Data Analysis**

Upon completion of data collection, the responses were entered into the computer. The first computer data print-out listed frequencies and percentages of close-ended items on the two questionnaire sets and the parent information forms to enable the researcher to check the feasibility of the planned statistical analysis. The open-ended responses were then categorized by the researcher with a second judge to validate the groupings of responses. A large correlation matrix of all variables was generated. Scattergrams of individual questions were plotted for fathers and mothers from four of the behavior inventories (Older Child Expectations/Observations Inventory, Infant Expectations/Observations Inventory, Parental Self-Expectations/Observations Inventory and Sibling Behavior Inventory). A difference score was calculated for each of these four inventories.

For the first three inventories, the following general equations were used in determining the difference score. (Difference score = Observations - Expectations). Because some items were positive and some negative in the behaviors described, the questions were added if they referred to positive behaviors and subtracted if they referred to
negative behaviors. Behaviors that were considered neither positive or negative were omitted from the equations. Since the questions were the same for both mothers and fathers, the equations are the same. Numbers in the equations refer to actual question numbers as presented to the parents on the individual inventories. A positive difference score indicated that parents' observed more positive behaviors than they expected. A negative difference score indicated that parents expected more positive behaviors than they observed (see Appendix C).

Similar equations were used in determining a difference score for the Sibling Behavior Inventory in order to compare parents' perceptions of behavioral changes in their sibling before and after the newborn's birth. Positive, negative, and neutral items were treated in the same way as described above. Since the questions were the same for both mothers and fathers, the equations are the same. Numbers in the equations refer to actual question numbers as presented to the parents on the individual inventories (see Appendix C). This change score variable was then correlated with other variables.

For the Iowa Parent Behavior Inventories, the items within a factor were summed for a total factor score used in analyzing the data. The six scales within the Broussard Infant Perception Inventory were added for a total score (Broussard & Hartner, 1971). Thus, a value is obtained for parents' perceptions of their newborn at Time 1 and Time 2. No difference score was obtained. The Degree of Bother Inventory score was calculated by assigning values of 1-4 to each of the six items on the inventory and totaled. The higher the total
value, the more bothered the parents are by newborn behaviors as listed (see Appendix B). These scores were all correlated with other variables.
RESULTS AND DISCUSSION

The purpose of this study was to investigate parents' perceptions of the behavior of their first-born only sibling's behavior in response to the birth of a second-born child. Of secondary concern, was the relationship between parents' expectations of their newborn infant before the birth with their observations of that newborn after the birth. Lastly, parents' perceptions of their own expectations and behaviors before and after the birth were investigated.

The following null hypotheses were tested:

1. There is no relationship between perceived behaviors of the sibling after the birth of a newborn and parental expectations prior to the birth.
2. There is no relationship between gender of the sibling and perceived behaviors of that sibling.
3. There is no relationship between age of the sibling at the newborn's birth and the perceived behaviors of that sibling.
4. There is no relationship between preparation of the sibling for the birth of a newborn and the perceived behaviors of that sibling after the birth of the newborn.
5. There is no relationship between sibling contact with mother during hospitalization for the birth and the perceived behaviors of the sibling.
6. There are no differences between mothers and fathers in expectations of sibling behaviors.
7. There are no differences between mothers and fathers in their perceptions of the behavior of the sibling following the birth of the newborn.

8. There is no relationship between parents' perceptions of their own behaviors and the perceived behavior of the sibling after the birth of the newborn.

9. There is no relationship between the parents' perceptions of the newborn's behaviors before birth and the perceived behavior of the newborn after birth.

Research findings will be presented and discussed for each hypothesis. Data were analyzed using correlation analysis and scattergrams. Rather than present large tables of correlation matrices, results will be reported within the text. Scattergrams comparing the differences between mothers and fathers before and after the birth of the newborn are also presented.

The first null hypothesis, there is no relationship between perceived behaviors of the sibling after the birth of a newborn and parental expectations prior to birth was partially rejected. Results from scattergrams were used in testing this hypothesis. A comparison of responses between mothers' and fathers' expectations of the sibling's behavior before the birth of the newborn to observations of sibling behavior after the birth of the newborn as reported on the Older Child Expectations/Observations Inventory are plotted on scattergrams (Figures 2 and 3). In these figures, the 45 degree line going through the origin represents the set of points where mothers'
Figure 2. Comparison of the responses between mothers' expectations (ME) and observations (MO) of sibling behaviors on the Older Child's Expectations/Observations Inventory
Figure 3. Comparison of the responses between fathers' expectations (FE) and observations (FO) of sibling behaviors on the Older Child's Expectations/Observations Inventory.
or fathers' expectations of sibling behavior would be the same as their observations. The most evident results illustrated by these figures are that both mothers' and fathers' expectations of their sibling's behavior are generally higher than their observations. This is indicated by the fact that the plotted points occur mostly in the upper left quadrant, lying above the 45 degree line. This may be attributed to parents' thinking that children will live up to their expectations. In addition, couples who are expecting a second child may feel closer to each other and therefore have shared their expectations for their expanding families.

In Figure 2, the fact that the swarm of points does not center around the line indicates quantitative differences in mothers' expectations and observations. The qualitative differences in mothers' expectations and mothers' observations of sibling behavior may be inferred from items deviating either from the major swarm of points or from the 45 degree line. The items representing these points are indicated in the scattergram by item numbers and are as follows.

After the baby is born, to what extent do you expect your older child to:

1. Seem pleased with the new baby?
6. Show the baby to others?
15. Have toileting accidents?
17. Avoid involvement with the baby?
In Figure 3, quantitative differences in fathers' expectations and observations are again indicated by the fact that the swarm of points does not center around the line. The qualitative differences in fathers' expectations and fathers' observations of sibling behavior may be inferred from items deviating either from the major swarm of points or from the 45 degree line. The items representing these points are indicated in the scattergram by item numbers and are as follows.

After the baby is born, to what extent do you expect your older child to:

6. Show the baby to others?
11. Hit or mistreat the baby?
12. Ask you to give the baby to someone else?
15. Have toileting accidents?
17. Avoid involvement with the baby?

Neither mothers or fathers expected the sibling to show the newborn to others as often as was observed. Both parents expected more toileting accidents and greater avoidance of involvement with the newborn than was observed. This may be due to emphasis in popular literature indicating that siblings will regress in areas such as toilet training, and that siblings will be jealous, not wanting to be involved with the newborn. Instead, the parents found that their sibling wanted to show the newborn to others and be involved.

Null hypothesis two, there is no relationship between gender of the sibling and perceived behaviors of that sibling was not rejected.
There were no significant correlations between gender of sibling and that sibling's behavior in relation to the newborn. This is in accordance with research findings by Abramovitch et al. (1982), Dunn and Kendrick (1982a), and Lamb (1978a) which showed no consistent differences in sibling behavior for male and female siblings. In a somewhat related finding, sibling gender was positively correlated with Broussard's Degree of Bother Inventory as reported by mothers ($r = .27, p = .05$). Mothers reported being more bothered by newborn behaviors such as crying, spitting up, sleeping, feeding, elimination, and lack of a predictable schedule when the sibling was a boy.

Null hypothesis three, there is no relationship between age of the sibling at the newborn's birth and the perceived behaviors of that sibling, was rejected due to a number of significant findings. For the Sibling Behavior Inventory, the differences between fathers' observations of the sibling's behavior before and after the birth of the newborn were positively correlated with the sibling's age ($r = .29, p = .05$). That is, for older children, the sibling behaviors observed by the fathers after the birth of the newborn were given higher ratings by the fathers than sibling behaviors observed prior to the birth of the newborn. This was not true for mothers. This could be due to fathers becoming more involved with the sibling after the birth of the newborn, possibly out of necessity and maybe because fathers prefer playing with older children (Lamb, 1976), thus, leaving mothers to spend more time caring for the newborn.
On the other hand, for the Older Child's Expectations/Observations Inventory, as age of the sibling increased the difference score for mothers decreased, indicating that mothers' expectations of the sibling's behavior were greater than her observations of that sibling's behavior \( r = -0.52, p = 0.02 \). Thus, the older the sibling, the more mothers tended to have expectations of the sibling which were not met. As children grow older, mothers' expectations of them tend to increase. Therefore, mothers of older siblings expected more positive behaviors from those siblings than would mothers with younger siblings.

Sibling age correlated positively with mothers' scores on the Broussard Infant Perception Inventory before the birth of the newborn \( r = 0.41, p = 0.003 \). As sibling age increased, mothers expected less desirable infant behaviors in the areas of crying, feeding, spitting up, sleeping, and elimination. Perhaps these more seasoned mothers expected the worst in newborn behaviors since the contrast between a sibling of increased age and a newborn would be greater. In addition, parents often view the first-born child in such positive and idealized ways feeling that no other child could ever be as "ideal" as this one. This may lead to their being unable to perceive the newborn in positive ways.

In contrast, sibling age correlated negatively with fathers scores on the Broussard Infant Perception Inventory after the birth of the newborn \( r = -0.28, p = 0.04 \). Fathers whose sibling were older perceived their newborns as having more desirable behaviors in the
areas of crying, feeding, spitting up, sleeping, and elimination than fathers of younger siblings. Perhaps, fathers who were accustomed to the easier routines of living with older children had forgotten the characteristics of infant behaviors. Because of the greater number of years between children, it is possible that fathers idealized the period of infancy.

Three out of six IPBI maternal behaviors (Parental Involvement, Limit Setting, and Reasoning Guidance) at both time periods were significantly correlated with sibling age. Sibling age correlated negatively with Parental Involvement of mothers at Time 1 ($r = -0.37$, $p = .007$) and Time 2 ($r = -0.36$, $p = .008$). As sibling age increased, there was less maternal involvement. Sibling age correlated positively with Limit Setting of mothers, Time 1 ($r = 0.29$, $p = .04$) and Time 2 ($r = 0.33$, $p = .02$). Limit Setting by mothers increased as sibling age increased. Reasoning Guidance was positively correlated with age of the sibling at Time 1 ($r = 0.29$, $p = .05$) and Time 2 ($r = 0.34$, $p = .02$). Reasoning Guidance by mothers increased as sibling age increased. As children get older, mothers may use more reasoning and explanations in their guidance, due to increased understanding by the child.

Two out of five IPBI paternal behaviors (Parental Involvement and Intimacy) before the birth of the newborn were significantly correlated with sibling age. Sibling age correlated negatively with Parental Involvement of fathers at Time 1 ($r = -0.36$, $p = .01$). Sibling age also correlated negatively with Intimacy by fathers at Time 1 ($r = -0.36$, $p = .01$). As sibling age increased, there was
less involvement by fathers as well as less paternal intimacy before the birth. As children get older, fathers tend to become less involved in daily activities, allowing the child to become more independent. Many fathers display less physical contact and intimacy with their children as the children get older.

Three out of five IPBI paternal behaviors (Limit Setting, Responsiveness, and Reasoning Guidance) after the birth of the newborn were significantly correlated with sibling age. At Time 2, sibling age correlated positively with Limit Setting ($r = .41$, $p = .003$); Responsiveness ($r = .35$, $p = .01$); and Reasoning Guidance ($r = .32$, $p = .03$). After the newborn's birth, fathers reported more Limit Setting, Responsiveness, and Reasoning Guidance as sibling age increased. This finding was not true before the newborn's birth. One could speculate that after the newborn's birth, fathers interact more with the sibling since mothers would be spending more time caring for the newborn. The parents are consistent in their reports of increased use of Reasoning Guidance with older siblings, indicating good developmental awareness in this area.

For the Infant Expectations/Observations Inventory, the differences between fathers' observations and expectations were positively correlated with sibling age ($r = .38$, $p = .008$). That is, fathers' observations of newborn behaviors were higher than they had expected as the age of the sibling increased.

Null hypothesis four, there is no relationship between preparation of the sibling for the birth of a newborn and the
perceived behaviors of that sibling after the birth of the newborn, was partially rejected. Sixty-seven percent of the siblings in this study attended sibling preparation classes. There were no significant correlations between sibling preparation as measured by sibling class attendance and the perceived behaviors of the sibling after the birth of the newborn. This is in contrast to findings reported by Legg (1974) that parents of siblings who had early planned preparation for the birth of the newborn reported developmental gains such as rapid toilet training, ability to play independently, easier separation from mother, and the relinquishment of a special object such as a pacifier. Research studies focusing on the feasibility of pediatric hospital preparation classes for children, found positive benefits to the children only when the teaching was individualized and addressed the children's concerns. Indeed, negative effects, especially in the form of misconceptions and increased anxiety had been noted (Peterson, Ridley-Johnson, Tracy, & Mullins, 1984).

Questions designed to measure sibling preparation other than attendance at classes were correlated with sibling behaviors. One question, "Does your older child ask when the baby will come?", was negatively correlated with the difference score for mothers on the Older Child Expectations/Observations Inventory ($r = -0.57, p = .01$). Thus, expectations were less frequently met for mothers whose siblings more often asked when the baby would come than for those mothers whose children did not ask as often. Perhaps mothers whose siblings asked questions perceived those children as being more positive and
interested in their newborn. Children will repeat a question when they are concerned or worried, not just when they are interested and excited.

Additional variables were significantly correlated with sibling classes. Attendance at sibling classes was positively correlated with mothers' attendance at prenatal classes ($r = .24$, $p = .05$) and approached significance with fathers' attendance at classes ($r = .23$, $p = .067$). Parents who attended prenatal classes had siblings who also went to sibling preparation classes. It was expected that parents who attended refresher prenatal classes for themselves would seek similar opportunities for their siblings.

Attendance at sibling classes was positively correlated with mothers' Broussard Infant Perception Inventory, Time 1 ($r = .29$, $p = .02$). Mothers whose siblings attended classes expected their newborn to have more problems with crying, feeding, spitting up, sleeping, elimination, and settling down. This could be due to discussing newborn behaviors in the sibling classes, thereby reminding mothers what to expect from their infants. Most sibling classes encourage parent participation so information shared with the children is also shared with the parents. Sibling class attendance was also positively correlated with Parental Involvement on the fathers' IPBI, Time 1 ($r = .29$, $p = .02$) and with Limit Setting on the fathers' IPBI, Time 2 ($r = .28$, $p = .03$). Parents who make the decision to have their siblings attend preparation classes may be more aware of their children's needs and thus, more involved.
Null hypothesis five, there is no relationship between sibling contact with mother during hospitalization for the birth and the perceived behaviors of the sibling, was not tested. Fifty-three of the 55 parents reporting on this item reported that siblings visited their mothers in the hospital. This is in accordance with hospital trends, in which the siblings are encouraged to visit mother and newborn in the hospital.

Null hypothesis six, there are no differences between mothers and fathers in expectations of sibling behaviors was rejected due to a number of significant findings. Results from a scattergram, correlation matrix, and discussion of parents' comments in response to open-ended questions were used to test this hypothesis. A comparison of responses between mothers' and fathers' expectations of the sibling's behavior before the birth of the newborn as reported on the Older Child Expectations Inventory is plotted on a scattergram (Figure 4). In that figure, the 45 degree line represents the set of points where mothers' expectations would be the same as fathers' expectations.

The most evident result illustrated by this figure is that mothers' expectations of their sibling's behavior in response to the newborn are higher than fathers' expectations. This is indicated by the plotted points in the upper left quadrant of the 45 degree line. The fact that the swarm of points does not center around the line indicates quantitative differences in expectations between mothers and fathers. Qualitative differences in mothers' and fathers'
Figure 4. Comparison of the responses between mothers' expectations (ME) and fathers' expectations (FE) of sibling behaviors on the Older Child's Expectations/Observations Inventory.
expectations may be inferred from items deviating either from the major swarm of points or from the 45 degree line. The item representing this point is indicated on the scattergram by item number and is as follows: 26) "Has your older child had the opportunity to feel the baby moving?" It is assumed that mothers would be the most accurate in reporting on this question. It is interesting to note that fathers reported that the sibling had the opportunity to feel the baby more often than did mothers.

As reported in the results for hypothesis three, a negative correlation was found between the mothers' difference score on the Older Child's Expectations/Observations Inventory and the sibling's age ($r = -0.52, p = 0.02$). Thus, mothers expectations tended to be met less often as the sibling's age increased. The expectations of sibling behavior as measured by the same inventory did not correlate significantly with sibling age for fathers thus indicating a difference between mothers and fathers. Mothers with older siblings may have had unrealistic expectations of their sibling's abilities due to their increased age. Fathers may have been more realistic in that they may not have expected more mature behavior from older siblings.

Of the 110 parents returning the second questionnaire, 83 (75%) responded to the open-ended question: "What behaviors did you expect your older child to have after the infant's birth that did not occur?" Fifty-two percent of these parents ($n = 24$ mothers, $n = 19$ fathers) reported that they expected jealousy from their sibling but that it did not occur. Many researchers have noted negative behavior changes
in the older sibling towards the newborn, including jealousy (Dunn et al., 1981; Field & Reite, 1984; Lamb, 1982; Legg, 1974). Information made available to parents in prenatal classes informs parents that their older children will be jealous of the newborn. An interesting finding in this study is that parents who expected jealousy in their sibling did not observe it. When parents were asked to comment on negative behaviors that they noticed after the newborn's birth, no mothers and only 4 fathers out of 110 parents (4%) reported jealousy.

Other sibling behaviors that parents expected but that did not occur were regression (2%), demanding attention (3%), aggression (4%), disliking the baby (3%), toileting difficulties (5%), wanting to help too much with the baby (4%), and independence (3%). The remaining comments were statements to the effect that expectations of the sibling's behavior were met.

In Figure 5, a comparison of the responses between mothers and fathers on the Sibling Behavior Inventory, Time 1 are plotted. The most evident result from scanning this figure is that there appears to be a tendency for mothers and fathers to rate sibling behavior in similar ways. In that figure, the 45 degree line going through the origin also seems to go through the swarm of points. The line represents the set of points where mothers and fathers would be responding in the same way to sibling behavior as observed before the birth. Since fathers are increasingly more involved in child rearing (Maccoby & Martin, 1983), it was assumed that mothers and fathers would have similar responses to questions identifying the sibling's
Figure 5. Comparison of the responses between mothers' (FM) and fathers' (FF) observations of sibling behaviors on the Sibling Behavior Inventory, Time 1.
behavior. There are no qualitative differences in mothers' and fathers' reporting of sibling behavior before the birth of a newborn since points do not deviate either from the major swarm of points or the 45 degree line.

Null hypothesis seven, there are no differences between mothers and fathers in their perceptions of the behavior of the sibling following the birth of the newborn was partially rejected. Results from scattergrams, correlation matrix and discussion of parents comments in response to open-ended questions were used in partially rejecting this hypothesis.

A comparison of the responses between mothers and fathers on the Older Child Observations Inventory are plotted on a scattergram (Figure 6). In that figure, the 45 degree line going through the origin represents the points where mothers' observations would be the same as fathers'. The most evident result from scanning this figure is that mothers' gave higher ratings to their sibling's behavior in response to the newborn than did fathers. This is indicated by the plotted points in the upper left quadrant of the 45 degree line. The qualitative differences in mothers' observations and fathers' observations may be inferred from items deviating either from the major swarm of points or from the 45 degree line. The items representing these points are indicated in the scattergram by item numbers and are as follows.

To what extent does your older child:

6. Show the baby to others?
Figure 6. Comparison of the responses between mothers' observations (MO) and fathers' observations (FO) of sibling behaviors on the Older Child's Expectations/Observations Inventory.
8. Ask to be cuddled?
11. Hit or mistreat the baby?
18. Ask questions about the baby?

One could speculate that the reason mothers observed these behaviors more often than fathers is that they spent more time at home with the children following the birth of the newborn.

In Figure 7, a comparison of the responses between mothers and fathers on the Sibling Behavior Inventory, Time 2 are plotted. The most evident result illustrated by this figure is that mothers and fathers tend to agree with each others' observations of their older sibling's behaviors after the birth of the newborn. In that figure, the 45 degree line going through the origin also seems to go through the swarm of points. The line represents the set of points where mothers and fathers would be responding in the same way to sibling behaviors observed after the newborn's birth. Since the observations of sibling behaviors by mothers and fathers were similar before the newborn's birth, it was expected that observations of sibling behaviors after the birth would also be similar.

Of the 110 parents returning the second questionnaire, 80% (n= 43 fathers, n= 45 mothers) responded to the question: "What positive changes in your older child's behavior did you notice after the infant's birth?" Three major positive behaviors were reported by both mothers and fathers. Twenty-nine parents (33%) reported that their sibling was loving and caring towards the newborn. Twenty-six parents (30%) noted that their sibling was more helpful after the
Figure 7. Comparison of the responses between mothers' (SM) and fathers' (SF) observations of sibling behaviors on the Sibling Behavior Inventory, Time 2
birth of the newborn. Fourteen parents (16%) stated that their sibling was more independent and grown-up since the birth.

Other positive behaviors that were reported included the sibling speaking clearer (3%), improving in toileting habits (5%), being more responsible (6%), and being happier at school and more outgoing (3%). Although the focus of literature on sibling behavior towards a newborn is often negative, it is clear that many parents perceive that their sibling changes in some very positive ways. Researchers have reported that older siblings display significant improvement in eating behavior (Trause et al. 1981), a move toward independence and mastery of tasks (Legg et al. 1974) and increased independence and interest and concern about the newborn (Dunn & Kendrick, 1981a; Kendrick & Dunn, 1982).

Of the 110 parents returning the second questionnaire, 60% (n= 39 mothers, n= 27 fathers) responded to the question: "What negative changes in your older child's behavior did you notice after the infant's birth?" Five major areas of negative behaviors were reported by both mothers and fathers. Fourteen parents (21%) reported more whining and crying by their sibling. Ten parents (15%) noted that the sibling did not listen to them as well as before the birth of the newborn. Nine parents (14%) reported increased problems at bedtime. Eight parents (12%) reported misbehaving to get attention and eight reported regression in behaviors such as speaking baby talk and using the pacifier again. Other negative sibling behaviors noted include anger and temper tantrums (8%), being too rough with the baby (8%), jealousy (6%), and toileting problems (5%). Many researchers
have found similar negative behaviors in the siblings when looking at their behavior in response to the birth of a newborn (Dunn & Kendrick, 1981a; Legg et al., 1974; Trause et al., 1981).

Null hypothesis eight, there is no relationship between parents' perceptions of their own behaviors and the perceived behavior of the older sibling after the birth of the newborn was partially rejected due to a number of significant findings. Several factors of parents' behavior as measured by the IPBI were significantly correlated with the perceived behavior of the older sibling. For the Sibling Behavior Inventory, the difference between fathers' observations of the sibling's behavior after the birth of the newborn and observations of behavior before the birth of the newborn was positively correlated with two of the six IPBI maternal factors (Limit Setting and Reasoning Guidance). The difference score for fathers was positively correlated with maternal Limit Setting ($r = .30, p = .05$) and Reasoning Guidance ($r = .37, p = .02$). Thus, siblings whose fathers observed more positive behaviors than they had expected had mothers who scored higher on Limit Setting and Reasoning Guidance. Perhaps, fathers did not expect positive behavior from their siblings because the Limit Setting and Reasoning Guidance in their families came from the mothers. Fathers would have expected mothers to be less influential in these areas when they were involved with newborn cares.

For the Older Child's Expectations/Observations Inventory, the difference between mothers' observations and their expectations of sibling behaviors after the birth of the newborn was negatively
correlated with Limit Setting on the fathers' IPBI, Time 2 (r = -.51, p = .04). Therefore, if mothers' expectations of sibling behaviors were higher than their observations, fathers' did less limit setting. For fathers who took less responsibility in setting limits, mothers were more disappointed in their sibling's behavior. In these families, it is likely that neither parent took responsibility for limit setting after the birth of the newborn, therefore resulting in less positive sibling behavior.

Null hypothesis nine, there is no relationship between the parents' perceptions of the newborn's behavior before birth and the perceived behavior of the newborn after birth, was rejected due to a number of significant findings. Results from scattergrams and a correlation matrix were used to test this hypothesis. A comparison of responses between mothers' expectations of newborn behaviors before the birth of the newborn as reported on the Infant Expectations Inventory Time 1 and the Infant Observations Inventory, Time 2 are plotted on the scattergram in Figure 8. The same comparison of fathers' responses is plotted on the scattergram in Figure 9. In these figures, the 45 degree line represents the set of points where parents' expectations would be the same as their own observations.

The most evident result illustrated by Figure 8 is that mothers had differences in expectations and observations of their newborn infant's behavior on almost all of the items. This is indicated by the random display of points. The fact that the swarm of points does not center around the line indicates quantitative differences in
Figure 8. Comparison of the responses between mothers' expectations (MIE) and observations (MIO) of newborn behaviors on the Infant Expectations/Observations Inventory.
Figure 9. Comparison of the responses between fathers' expectations (FIE) and observations (FIO) of newborn behaviors on the Infant Expectations/Observations Inventory.
expectations and observations. The qualitative differences in mothers' expectations and mothers' observations may be inferred from items deviating from the 45 degree line. The items representing these points are indicated in the scattergram by item numbers. Items in which expectations were higher than observations are as follows.

To what extent do you expect your new infant to:

4. Fuss?
6. Make demands on your time?
7. Wake up at night?
9. Interfere with family routine, such as eating meals on time?

Items in which observations were higher than expectations are as follows.

To what extent do you expect your new infant to:

1. Fit into your family?
3. Take the bottle well or nurse well?
5. Adapt to the noise of a sibling?

Mothers expected more negative behaviors than they observed and observed more positive behaviors than they expected. Throughout a second pregnancy, parents hear about the difficulties of bringing a second child into the family, but rarely hear about the positives.

The most evident result from scanning Figure 9 is that fathers rated expectations of newborn behaviors higher than they rated their observations of the behavior, but are in much more agreement than mothers' expectations. This is indicated by the plotted points in the
upper left quadrant of the 45 degree line. The fact that the swarm of points does not center around the line indicates quantitative differences in expectations. The qualitative differences in fathers' expectations and fathers' observations may be inferred from items deviating either from the major swarm of points or from the 45 degree line. The items representing these points are indicated in the scattergram by item numbers and are as follows. Items in which fathers' observations were higher than their expectations are as follows.

To what extent do you expect your new infant to:

3. Take the bottle well or nurse well?
5. Adapt to the noise of a sibling?

The item that most deviated, in which fathers' expectations of infant behavior were higher than their observations, is as follows.

6. Make demands on your time?

Mothers and fathers were in agreement as to their expectations and observations of the newborn infant for taking the bottle or nursing well, adapting to the noise of a sibling, and making demands on their time. They differed on the other items.

The difference score for the mothers' Infant Expectations/Observations Inventory was negatively correlated with the mothers' Broussard Infant Perception Inventory, Time 2 ($r = -.52, p = .0002$) and was negatively correlated with the fathers' Broussard Infant Perception Inventory, Time 2 ($r = -.40, p = .006$). The difference score for the fathers' Infant Expectations/Observations Inventory was
negatively correlated with the fathers' Broussard Infant Perception Inventory, Time 2 ($r = -0.66, p = 0.0001$) and was negatively correlated with the mothers' Broussard Infant Perception Inventory, Time 2 ($r = -0.48, p = 0.0005$). Parents who had higher expectations of their newborn's behavior prior to birth perceived those infants as having fewer problems after birth. Parents who expected positive behaviors from their newborns may have looked for their newborns to display those behaviors and therefore overlooked negative behaviors. It is also possible that parents who expect positive newborn behaviors are more confident in their infant care-taking skills and thus transmit security to their newborns who then respond positively.

The difference score for the mothers' Infant Expectations/Observations Inventory was negatively correlated with mothers' results on the Broussard's Degree of Bother Inventory ($r = -0.35, p = 0.02$) and was negatively correlated with fathers' results on the same inventory ($r = -0.34, p = 0.02$). Mothers who had higher expectations of their newborn's behavior perceived those infants as having behaviors that were less bothersome to them. Infants whose behaviors of crying, spitting up, sleeping, feeding, elimination, and lack of a predictable schedule were less bothersome to fathers, had mothers with higher expectations for their infants. The difference score for the fathers' Infant Expectations/Observations Inventory was negatively correlated only with the fathers' report on the Broussard's Degree of Bother Inventory ($r = -0.32, p = 0.03$). Fathers who had higher expectations of their newborn's behavior perceived those infants as
having behaviors that were less bothersome to them. This finding relates to the finding described in the previous paragraph. This consistent finding of higher parental expectations correlating with greater pleasure in their newborns is extremely interesting and an area not previously studied.

Ancillary Findings

Other findings were identified as significant, though they were not related to the original hypotheses. The Sibling Behavior Inventory was designed to measure parents' perceptions of their sibling's behavior before the birth of the newborn and again after the birth. Figures 5 and 7 show that the group of mothers and the group of fathers tended to agree with each others' observations of their older sibling's behavior both before and after the birth of the newborn. More agreement is found between mothers and fathers responses than when mothers or fathers responses on Time 1 are plotted against their own responses on Time 2 (Figures 10 and 11). Thus over time, when one member of the group of parents changes, both members of the group of parents tend to change together. This may indicate that within the pairs of parents a high level of communication takes place during this period.

In Figure 10, a comparison of responses between mothers' observations of their sibling's behavior before and after the birth of the newborn as reported on the Sibling Behavior Inventory are plotted. The 45 degree line going through the origin also seems to go through
Figure 10. Comparison of the responses between mothers' observations, Time 1 (FM) and mothers' observations, Time 2 (SM) of sibling behaviors on the Sibling Behavior Inventory.
Figure 11. Comparison of the responses between fathers' observations, Time 1 (FF) and fathers' observations, Time 2 (SF) of sibling behaviors on the Sibling Behavior Inventory.
the swarm of points. The line represents the set of points where mothers would be responding in the same way both before and after the birth of the newborn. The most evident result illustrated by this figure is that mothers tended to observe their sibling displaying similar frequencies of behaviors before and after the birth of the newborn with the exception of a few items. Qualitative differences in mothers' observations at the two time periods may be inferred from items deviating either from the major swarm of points or from the 45 degree line. For all of these items, mothers reported higher observations than expectations as indicated by the divergent points in the lower right quadrant of the 45 degree line. The items representing these points are indicated on the scattergram by item number and are as follows.

Does your older child:

2. Talk about what the baby will be able to do?
3. Ask to care for the baby?
18. Stay dry during the night?
28. Whine when asked to do something?

For all four of these behaviors, mothers observed an increase in frequency of behavior after the birth of the newborn. For young children, ages six years and under, it is logical that they would ask to care for the baby and be more curious about what the baby can do, once the newborn is actually present. It is interesting that mothers reported one other positive and one negative behavior as increasing in frequency. Siblings are perceived as gaining in independence in the
area of bedwetting and reverting in the area of communication after
the birth of the newborn. Similar finding have been reported many
times in the literature (Dunn & Kendrick, 1981a; Legg et al., 1974;
Trause et al., 1981).

In Figure 11, a comparison of responses between fathers'
observations of their sibling's behavior before and after the birth of
the newborn as reported on the Sibling Behavior Inventory are plotted
in a similar way as described above. The most evident result
illustrated by this figure is that fathers tended to observe their
sibling displaying similar frequencies of behaviors before and after
the birth of the newborn with the exception of a few items.
Qualitative differences in fathers' observations at the two time
periods may be inferred from items deviating either from the major
swarm of points or from the 45 degree line. For all of these items,
fathers reported higher observations than expectations as indicated by
the divergent points in the lower right quadrant. The items
representing these points are indicated on the scattergram by item
number and are as follows.

Does your older child:

2. Talk about what the baby will be able to do?
3. Ask to care for the baby?
18. Stay dry during the night?

For all three of these behaviors, fathers observed an increase in
frequency of behavior after the birth of the newborn similar to that
of mothers. Fathers did not notice an increase in frequency of
whining, as mothers did. If mothers were home during the day with their sibling and newborn, possibly they would observe more negative behaviors than fathers would observe. Children may be pleased to see their fathers at the end of the day and therefore be more pleasant to them.

Parents' perceptions of their own behaviors as they related to the sibling's behavior were discussed in hypothesis eight. However, some interesting findings were noted when comparing parents' self-expectations with their self-observations. Results from scattergrams were used to analyze this comparison. In Figures 12 and 13, the 45 degree line going through the origin represents the set of points where mothers' or fathers' self-expectations would be the same as their self-observations. The most evident result from scanning these figures is that for both mothers and fathers, their self-expectations are much higher than their self-observations. This is indicated by the plotted points in the upper left quadrant of the 45 degree line. The fact that the swarm of points does not center around the line indicates quantitative differences in self-expectations and self-observations. Qualitative differences in mothers' or fathers' responses may be inferred from items deviating either from the major swarm of points or from the 45 degree line. There were no qualitative differences for fathers.

For mothers, the only items that do not indicate higher expectations than observations are represented on the scattergram by item number and are as follows.
Figure 12. Comparison of the responses between mothers' expectations (MSE) and observations (MSO) of their own behavior on the Parental Self Expectations/Observations Inventory.
Figure 13. Comparison of the responses between fathers' expectations (FSE) and observations (FSO) of their own behavior on the Parental Self Expectations/Observations Inventory.
I will:

1) Feel good after the baby is born.

10) Feel excited about the new baby.

Item one is the only item in which mothers' observations were higher than their expectations. Mothers felt better after the baby was born than they had expected to feel. Mothers expecting a second child are warned by others and informed in refresher prenatal classes that having two children is hard work and very exhausting. Therefore, most mothers would expect to not feel good after the birth of a second baby. Item ten is the only item in which mothers observations equaled their expectations.

For all other items in the inventory, both mothers and fathers had higher expectations than observations. These items relate to:
(a) feeling tired; (b) being pleased with the newborn's gender; (c) noting a change in the amount of help the sibling needs; (d) experiencing changes in family routines; (e) having time alone with spouse, sibling, infant, and self; and (f) needing outside help with sibling or infant. One could speculate that the experience of having a second child is different enough from that of having a firstborn that parents could not anticipate their own behavior accurately.

In response to question five on the open-ended questionnaire, many parents offered suggestions to others expecting a second child. These suggestions focused on preparing the first child and ensuring that s/he is involved in planning for the newborn. The second major area of suggestions focused on taking the time to give the sibling
extra attention and love and the importance of being patient with that sibling. Parents also reported that it would be helpful if the children were spaced at least three years apart in age.

**Limitations of the Study**

The findings obtained from the present study can only be generalized to a similar sample. The subjects were drawn largely from middle-class urban areas and cannot be viewed as representative of the population. Furthermore, subjects were not randomly selected which may have resulted in a built-in bias in the selection of the sample (Achenbach, 1978). Possible sources of bias involved in questionnaire research constitute a second limitation. These may have originated from response sets, demand characteristics, or instrument bias (Achenbach, 1978). Thirdly, this researcher assumed, as have other investigators, that parental reports are accurate. It was also assumed that parents filled out the questionnaire at Time 2 on the date as recorded on this form. Because of uncertainty of dates at Time 2, it is difficult to accurately predict the newborn's age at the time the second questionnaire was completed. Lastly, the results of the present study are based on correlations between variables. Since so many correlations were computed, it is difficult to know the value of those that are significant. Although correlation does not necessarily imply causation, it may point to causal relationships (Achenbach, 1978). Thus, researchers are cautioned when drawing conclusions about causal relationships based solely on correlational research.
SUMMARY

The purpose of the present study was to investigate parents' perceptions of their first-born only child's behavior in response to the birth of a second-born sibling. The following major areas were identified for study both before and after the birth of the newborn: (a) parental perceptions of sibling behaviors; (b) parental perceptions of newborn behaviors; and (c) parental perceptions of self-behaviors.

Subjects of this study were 70 parent couples who were expecting the birth of their second child. Questionnaires were completed by the couples during the last trimester of pregnancy and when the newborn was approximately four weeks old. Upon completion of data collection, the responses were entered into the computer. The first computer data print-out listed frequencies and percentages of close-ended items on the two questionnaire sets. The open-ended responses were also grouped at this time. A large correlation matrix of all variables was generated. A difference score was calculated for four of the inventories (Older Child Expectations/Observations Inventory, Infant Expectations/Observations Inventory, Parental Self-Expectations/Observations Inventory, and Sibling Behavior Inventory) and then correlated with other variables.

Significant correlations were found between age of the sibling and (a) fathers' observations of sibling behaviors (Sibling Behavior Inventory, Time 1 and Time 2); (b) mothers' expectations of sibling behaviors (Older Child's Expectations/Observations Inventory...
Difference Score); (c) mothers' expectations of newborn behaviors (Broussard Infant Perception Inventory, Time 1); (d) fathers' observations of newborn behaviors (Broussard Infant Perception Inventory, Time 2); (e) three maternal behaviors (IPBI factors; Parental Involvement, Limit Setting, and Reasoning Guidance, Time 1 and Time 2); (f) two paternal behaviors (IPBI factors; Parental Involvement and Intimacy, Time 1); (g) three paternal behaviors (IPBI factors; Limit Setting, Responsiveness, and Reasoning Guidance, Time 2); and (h) fathers' expectations and observations of newborn behaviors (Infant Expectations/Observations Inventory Difference Score). Thus, it seems likely that some kind of relationship exists between parents' behaviors, parents' expectations and observations of sibling behaviors, parents' expectations and observations of newborn behaviors and age of the sibling.

No significant correlations were found between sibling preparation as measured by sibling class attendance and the perceived behaviors of the sibling after the birth of the newborn. However, in a related finding, one question related to siblings' asking when the baby will come was significantly correlated with mothers' responses on the Older Child Expectations/Observations Inventory. Attendance at sibling classes was significantly correlated with (a) parents' attendance at refresher prenatal classes; (b) mothers' expectations of infant behaviors (Broussard Infant Perception Inventory, Time 1); and (c) two paternal IPBI factors (Parental Involvement and Limit Setting, Time 1). It is interesting to note that their seems to be a
relationship between sibling attendance at preparation classes and parental behaviors.

Several factors of parents' behaviors as measured by the IPBI were significantly correlated with the perceived behaviors of the sibling. Fathers' difference score on the Sibling Behavior Inventory correlated with two maternal IPBI factors (Limit Setting, Time 1 and Reasoning Guidance, Time 2). Mothers' difference score on the Older Child Expectations/Observations Inventory correlated with paternal Limit Setting (IPBI factor, Time 2).

Significant correlations were found between the inventories that related to parents' expectations and observations of newborn behaviors. Mothers' expectations and observations of newborn behaviors correlated with (a) mothers' and fathers' observations of newborn behaviors and (b) newborn behaviors that mothers' and fathers' reported as bothering them. Fathers' expectations and observations of infant behaviors correlated with (a) mothers' and fathers' observations of infant behaviors and (b) infant behaviors that fathers' reported as bothering them. Thus, it seems likely that a relationship exists between parents' expectations of newborn behaviors and their observations of those behaviors.

In addition to the above correlations, several scattergrams were drawn comparing the responses by item between mothers and fathers on four of the inventories. Examination of the scattergrams comparing mothers' and fathers' expectations and observations of sibling behavior indicated strong agreement, with a few items differing
(Sibling Behavior Inventory). More agreement was found between mothers' and fathers' responses than when mothers' or fathers' responses on Time 1 are plotted against their own responses on Time 2.

Generally, both mothers and fathers tended to have higher expectations of sibling behaviors before the birth of the newborn than observations of sibling behaviors after the birth of the newborn (Older Child's Expectations/Observations Inventory). Mothers reported differences in expectations and observations of newborn behaviors on almost every item, while fathers' expectations of newborn behaviors were higher than their observations. Parents were in agreement as to their expectations and observations of newborn behaviors on only two items (Infant Expectations/Observations Inventory).

Both mothers' and fathers' self-expectations were much higher than self-observations as shown on scattergrams. Fathers' self-expectations were higher for all items. Mothers' responses indicated self-observations higher than self-expectations for one item and equal for one item.

To gain a further understanding of changes that occur in families expecting a second child, five open-ended questions relating to sibling behavioral changes were designed. Three major areas of positive sibling behaviors and five areas of negative sibling behaviors were reported by both mothers and fathers. Fewer parents responded to the question relating to negative behaviors than responded to the question on positive behaviors. An interesting finding from these questions was that parents who expected jealousy in
their sibling after the birth of the newborn, did not observe it.

Many parents offered suggestions to others expecting a second child.
IMPLICATIONS FOR FUTURE RESEARCH

Because the study population is a small non-random sample of parents generally from middle-class urban areas, generalization of findings is limited to a similar sample. It is recommended that this study be replicated with a larger more representative sample. With a larger sample, questionnaire items could be factor analyzed. This would give a clearer description of important phenomena in the sibling relationship. Gaining access to medical centers for data collection is often a very difficult process. It would be of benefit to researchers to find different methods for obtaining potential subjects.

This study indicates many variables for further study. Of these, five have special relevance at the present time. (1) It would be interesting to follow the subjects in this study in a longitudinal extension of the present study. Since few studies of sibling relationships have been done, it would be interesting to see how parents' perceptions of that relationship change over time. (2) The reactions or behavioral changes of newborns or young infants in response to a sibling has not been studied. (3) A research study designed to investigate the relationship between parents' higher expectations of their children's behavior and parents' greater satisfaction with their children may yield interesting data on parent-sibling interactions. (4) Future research on the relationship of siblings and infants might well involve observations of sibling-infant interactions in their homes. Following these
interactions over time would help in the understanding of this unique relationship. (5) Other studies to determine the way that attachment between siblings develops would be interesting.

Parents, siblings, and professionals working with children and their families would benefit from new knowledge regarding the sibling relationship. With an increased knowledge base, some of the myths of having and becoming a sibling may be converted to information based on facts. Helping parents to better prepare themselves and their siblings for the birth of a newborn could enhance the lifelong sibling relationship. This is a relationship influencing the majority of children in the United States, thus it is necessary and imperative that quality sibling research continues.
REFERENCE LIST


Hollingshead, A. B. (1975). Four factor index of social status. Unpublished manuscript, Department of Sociology, Yale University, New Haven.


Sutton-Smith, B. (1982). Birth order and sibling status effects. In M. Lamb & B. Sutton-Smith (Eds.), Sibling relationships: Their nature and significance across the lifespan. Hillsdale, NJ: Lawrence Erlbaum Assoc., Inc.


ACKNOWLEDGEMENTS

Completing this dissertation signifies the accomplishment of a life-time goal. It would not have been possible to fulfill this dream without the help and support of many people. I would like to sincerely thank those who I will always remember as being especially helpful and supportive.

I am especially grateful to Dr. Sedahlia Jasper Crase for her friendship, guidance, dedication, and willingness to take on a project of this size on short notice.

To Dr. Sam Clark, who despite great hardship continued his support, encouragement, and friendship.

I cannot thank Dr. Leroy Wolins enough for the endless hours and patience he displayed in helping me from research design through data analysis.

To Dr. Dahlia Stockdale, Dr. Damaris Pease, and Dr. Elmer Schwieder for their consultation and support as members of my graduate committee.

A special note of gratitude to Sally Pyle, for her knowledge of computers and statistics, and her ability to make me laugh when I wanted to cry.

To Kathy and Mike Kosednar, a special thank you for their hospitality and support, especially in the data collection phase of the study.
To Dr. Pat Titus whose special friendship, knowledge, and expertise kept me going when times got rough and to Jonathan Titus for his patience while we worked.

Special thanks are also due to Connie and Jim Cade for their friendship, enthusiasm, and support.

Thank you to the nursing and medical staffs at Mercy Hospital Medical Center of Des Moines, Iowa and Kansas City Women's Clinic of Kansas City, Kansas, for their cooperation and collaboration in collecting data.

To my parents, I owe a debt of gratitude for instilling in me the confidence to pursue any goal and the knowledge that with hardwork and dedication comes success.

I wish to publicly express my sincere appreciation to my husband, Harvey, for his many sacrifices, the hours spent proofreading, and the understanding and special love he shared with me and the children while completing this dissertation.
APPENDIX A: QUESTIONNAIRE PACKET, TIME 1
June. 1988

Dear Parents,

I am a graduate student in Child Development at Iowa State University. As part of my doctoral degree program, I am conducting a study which will examine your perceptions of your firstborn child's behavior in response to the birth of his or her newborn sibling. In normal sibling relationships, both positive and negative interactions occur, making the sibling relationship an important influence in the life of a child. Although interaction between siblings has been studied extensively, little is known about the behavioral changes that may or may not occur in older children when their sibling is a very young infant. Studying your views of the sibling relationship will provide additional insight regarding the importance of sibling influence in the socialization process.

In order to carry out this study, both mothers and fathers will be involved. Both parents will be asked to complete two sets of questionnaires. The first set will be introduced to you by me at your prenatal class or I will have contacted you by phone and then mailed the questionnaires to your home. Included in this set will be a postage paid addressed postcard for you to return to me when your infant is born. The second set of questionnaires will then be mailed to you to be filled out when the infant is four weeks old. The questionnaires should be returned to the Kansas City Women's Clinic when you go for a prenatal visit. You will be asked to provide some background information. I will also ask for your name, address, and phone number on a separate piece of paper. This identification will only be used to send you the second set of questionnaires or to remind you to return materials. No subject will be identified by name. Each parent will be assigned an identification number. Please note that all information will be kept confidential. Subjects are free to withdraw from the study at any time. Your participation in this study will in no way affect the care you receive during your pregnancy and birth.

We value your participation in this study. At the conclusion of the study, I would be happy to share overall results with you. If you have any questions, please feel free to contact me, Jean Gulllicks, (515) 233-1912 or Dr. Sedahlia Crase, (515) 292-8842, and we will be happy to discuss the study with you.

By completing and returning the questionnaire forms, your consent to participate in this research project will be given. Thank you very much for your interest and cooperation in making this study a success.

Sincerely,

Jean Gulllicks
Graduate Student

Sedahlia Crase, Ph. D.
Major Professor in Charge of Research
September, 1988

Dear Parents,

I am a graduate student in Child Development at Iowa State University. As part of my doctoral degree program, I am conducting a study which will examine your perceptions of your firstborn child's behavior in response to the birth of his or her newborn sibling. In normal sibling relationships both positive and negative interactions occur making the sibling relationship an important influence in the life of a child. Although interaction between siblings has been studied extensively, little is known about the behavior changes that may or may not occur in older children when their sibling is a very young infant. Studying your views of the sibling relationship will provide additional insight regarding the importance of sibling influence in the socialization process.

In order to carry out this study, both mothers and fathers will be involved. Both parents will be asked to complete two sets of questionnaires. The first set will be introduced to you at your prenatal or sibling class. This set of questionnaires will be returned to your class instructor today or at your next class. Included in this set will be a postage paid addressed postcard for you to return to me when your infant is born. The second set of questionnaires will then be mailed to you to be filled out when the infant is four weeks old. Postage for returning the second questionnaires will be paid by me. You will be asked to provide some background information. I will also ask for your name, address and phone number on a separate piece of paper. This identification will only be used to send you the second set of questionnaires or to remind you to return materials. No subject will be identified by name. Each parent will be assigned an identification number.

Please note that all information will be kept confidential. Subjects are free to withdraw from the study at any time. Your participation in this study will in no way affect the care you receive during your pregnancy and birth.

We value your participation in this study. At the conclusion of the study, I would be happy to share overall results with you. If you have any questions, please feel free to contact Jean Gullicks (515) 233-1912 or Dr. Sedahlia Crase (515) 292-8842 and we will be happy to discuss the study with you.

By completing and returning the questionnaire forms, your consent to participate in this research project will be given. Thank you very much for your interest and cooperation in making this study a success.

Sincerely,

Jean Gullicks
Graduate Student

Sedahlia Crase
Ph. D.
Major Professor in
Charge of Research
I, ____________________________, willingly agree to participate in this research study which has been explained to me by Jean Gullicks, Graduate Student at Iowa State University.

I have been invited to participate in this research study. The study involves filling out two questionnaire sets and mailing a postage paid postcard. The total amount of my time spent will be approximately 45 minutes. The purpose of this study is to investigate parents' perceptions of their older child's behavior in response to the birth of a newborn sibling.

BENEFITS

There are no risks to me or to my children in this study. I will benefit by receiving a summary of the research results which will discuss the perceived behavior changes of the older sibling and influences that our new infant may have on our family. By gaining a better understanding of sibling relationships, I may be able to help my children have a warm, caring relationship with each other. There will be no cost to me as a participant in this study.

CONTACT PERSON

For more information concerning the research or my rights as a research subject, I can contact Jean Gullicks, the primary investigator at 515-233-1912 or Dr. Sedahnila Crase, major professor in charge of research at 515-292-8842.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. No compensation for participation will be given. I understand that I am free to withdraw my consent to participate in this study at any time without prejudice to my subsequent care. Refusing to participate will involve no penalty or loss of benefits to which I am otherwise entitled. I am free to seek care from a physician of my choice at any time. If I do not take part in or withdraw from the study, I will continue to receive care.

CONFIDENTIALITY

The confidentiality of information concerning my participation in this study will be maintained. No subject will be identified by name and each parent will be assigned an identification number. Names, addresses, and phone numbers as given on separate sheets of paper will only be used to send me the second set of questionnaires or to remind me to return research materials. The information from the study may be published as research. Any published material will not identify me by name.
I have read all of the above, asked questions, received answers concerning areas I did not understand, and willingly give my consent to participate in this research study. Upon signing this form, I will receive a copy of the letter.

_________________________   _______________________
Mother's Signature                  Date

_________________________   _______________________
Street Address          City   State   Zip Code

_________________________
Home phone

_________________________
Business phone

_________________________   _______________________
Father's Signature                  Date

_________________________
Business phone

_________________________   _______________________
Witness Signature                  Date

_________________________   _______________________
Witness Signature                  Date

Jean N. Gullicks
Graduate Student

Sedahlia Jasper Grase
Major Professor in Charge of Research
INFORMATION SHEET: TIME 1

IDENTIFICATION # ________

DATE OF RATING ________

1. MOTHER'S OCCUPATION ________________________________

2. Please indicate your combined family income for the year 1987.

   ■ Less than $10,000  ■ $41,000 to $50,000
   ■ $10,000 to $20,000  ■ $51,000 to $60,000
   ■ $21,000 to $30,000  ■ $61,000 to $70,000
   ■ $31,000 to $40,000  ■ Over $70,000

3. Check your highest educational level.

   ■ Some High School  ■ Some Graduate Work
   ■ High School Graduate  ■ MA/MS
   ■ Some College or Technical Training  ■ Doctorate
   ■ BA/BS  ■ Other

4. Your age in years

   ■ 20 or under  ■ 36 to 40
   ■ 21 to 25  ■ 41 to 45
   ■ 26 to 30  ■ 46 to 50
   ■ 31 to 35

5. OLDER CHILD’S BIRTHDATE______________ OLDER CHILD’S SEX ______

6. INFANT’S DUE DATE ____________

7. Are you attending prenatal classes with this pregnancy? ______

8. Is your spouse attending prenatal classes with you? ______

9. Do you already know the sex of your infant? ______ YES ______ NO

10. Is your older child considered healthy by your family doctor? ______ YES ______ NO

   GO TO NEXT PAGE ............
11. Does your older child suffer from a long term illness that interferes with his/her activities of daily living?
   yes  no
   If yes, please explain

12. Are you concerned about specific aspects of your child's health?
   yes  no
   If yes, please explain

13. Are you concerned about specific aspects of your child's growth and development?
    yes  no
    If yes, please explain

14. Please check all that apply to your older child:
    Child is living with both biological parents.
    Child is living with both adoptive parents.
    Child is living with one biological parent.
    Child is living with one adoptive parent.
    Child is living with a stepparent.
    Child has older or younger stepsiblings.
    You have lost a previous pregnancy of which your child is aware.
    Child has experienced the death of a sibling.

Please check the appropriate responses regarding care of your older child.

20. Is your older child currently cared for in a day care, preschool, or by a paid sitter....
    More than 30 hours/week
    20 to 30 hours/week
    10 to 20 hours/week
    None of the above
SIBLING BEHAVIOR INVENTORY: TIME 1

We are interested in learning more about the impact that a newborn has on the older child and the expectations that parents may have regarding this new relationship.

Before you begin to rate the items, have firmly in mind this older child you are rating. Consider only the behavior of that child over the past month.

Base your ratings on your own experience with your child. Consider only your own impressions. As much as possible, ignore what others have said about your child. Consider each question independently. Base ratings on outward behavior you actually observe. Do not try to interpret what might be going on in the child's mind.

RATING SCALE

<table>
<thead>
<tr>
<th>He or she</th>
<th>He or she</th>
<th>He or she</th>
<th>He or she</th>
<th>He or she</th>
</tr>
</thead>
<tbody>
<tr>
<td>almost never behaves that way</td>
<td>seldom behaves that way</td>
<td>behaves that way about half the time or I'm not sure</td>
<td>often behaves that way</td>
<td>almost always behaves that way</td>
</tr>
</tbody>
</table>

1 2 3 4 5

DOES YOUR OLDER CHILD...?

1. Show interest in books about new babies?
2. Talk about what the baby will be able to do?
3. Ask to care for the baby?
4. Fuss about going to bed at night?
5. Have "bad" dreams?
6. Seem to be generally happy, smiling on waking up?
7. Attempt to come into your bed at night?
8. Have a good appetite?
9. Require assistance in eating if food is cut and ready to eat?
10. Refuse particular food groups?
RATING SCALE

<table>
<thead>
<tr>
<th>Almost Never</th>
<th>Seldom</th>
<th>About Half the Time or Not Sure</th>
<th>Often</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

DOES YOUR OLDER CHILD........

RATING ITEM

11. Seem to enjoy mealtime?
12. Make himself/herself easily understood by people outside the immediate family?
13. Call self "baby" or "I'm little"?
14. Start conversations with you or others?
15. Say "I can't" when you know he/she can?
16. Willingly go to the toilet?
17. Resist efforts to toilet train?
18. Stay dry during the night?
19. Have accidents, either wet or soiled?
20. Follow you everywhere around the house?
21. Become upset when you leave him/her alone for a few minutes?
22. Use a security object during the day?
23. Use a security object for sleeping?
24. Have temper tantrums or out of control behavior?
25. Play quietly alone for periods of a half hour or longer?
26. Ask you to play?
27. Seek comfort when upset?
28. Whine when asked to do something?
29. Explore new surroundings?

GO TO NEXT PAGE........
RATING SCALE

<table>
<thead>
<tr>
<th>Almost Never</th>
<th>Seldom</th>
<th>About Half the Time</th>
<th>Often</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

DOES YOUR OLDER CHILD......

___30. Understand spoken instructions without being shown what to do?
___31. Tell you what he/she wants, rather than just using gestures?
___32. Listen to you when you talk to him or her?
___33. Misbehave in a structured situation such as church or a restaurant?
___34. Ask to play with friends?
___35. Suggest things the family can do together?
___36. Share his/her things willingly with friends?
___37. Show affection freely to people he/she likes?
___38. Demand to have his/her own way when playing?
___39. Do the things you ask?
___40. Finish projects that he/she starts?
___41. Laugh?
___42. Cry easily?
___43. Fear things such as animals, new places, dark?
___44. Whine when he/she wants something he/she can't have?
___45. Cuddle with you?
___46. Ask questions about the pregnancy and birth?
___47. Want to feel the baby moving?
___48. Ask questions about the baby?
___49. Ask when the baby will come?
___50. Discuss naming the baby? GO ON TO NEXT PAGE.....
OLDER CHILD EXPECTATIONS INVENTORY: TIME 1

RATING SCALE

He or she will almost never behave that way
He or she will seldom behave that way
He or she will behave that way about half the time or I'm not sure
He or she will often behave that way
He or she will almost always behave that way

1 2 3 4 5

AFTER THE BABY IS BORN, TO WHAT EXTENT DO YOU EXPECT YOUR OLDER CHILD TO................

RATING ITEM

___1. Seem pleased with the new baby?
___2. Ask to hold and care for the new baby?
___3. Want to be involved with the new baby?
___4. Increase his/her demands of you?
___5. Understand that you have to feed the baby instead of play?
___6. Show the baby to others?
___7. Continue his/her normal daily routine?
___8. Ask to be cuddled?
___9. Want to play with the baby's toys?
___10. Drink from the baby's bottle or want to nurse?
___11. Hit or mistreat the baby?
___12. Ask you to give the baby to someone else?
___13. Enjoy going to school or daycare?
___14. Want to be with you?
___15. Have toileting accidents?
___16. Need help with things he/she was doing alone?
___17. Avoid involvement with the baby?
RATING SCALE

<table>
<thead>
<tr>
<th>Almost Never</th>
<th>Seldom</th>
<th>About Half the Time</th>
<th>Often</th>
<th>Almost Always or Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

AFTER THE BABY IS BORN, TO WHAT EXTENT DO YOU EXPECT YOUR OLDER CHILD TO..............

RATING ITEM

18. Ask questions about the baby?
19. Talk about what the baby can do?
20. Ask to care for the baby?
21. Act jealous?
22. Cooperate with your requests?
23. Change his/her behavior?

Using the same rating scale: HAS YOUR OLDER CHILD........

24. Talked with you about the birth of the new baby?
25. Gone with mother for prenatal visits?
26. Had the opportunity to feel the baby moving?

27. Has he/she gone to a class that prepares brothers and sisters for the birth of a new baby? _____ yes _____ no

GO TO NEXT PAGE....
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These consist of pages:

105-107 and 118-120
Broussard Infant Perception Inventory
Infant Expectations Inventory
Parental Self-Expectations Inventory

133-136 and 145-148
Broussard's Infant Perception Inventory
Broussard's Degree of Brother Inventory
Infant Observation Inventory
Parental Self-Observations Inventory
IOWA PARENT BEHAVIOR INVENTORY (Mother Form)

Sedahlia Jasper Crase, Sam Clark, Damaris Pease
Department of Child Development
Iowa State University

CHILD'S NAME ___________________________ DATE OF RATING ____________

CHILD'S SEX _____ CHILD'S BIRTHDATE __________________________ (month, day, year)

MOTHER'S NAME ___________________________

We are interested in learning more about how parents and children interact. The following statements represent a variety of ways that parents may interact with their children. Before you begin, have firmly in mind the child you are rating. Please respond to the statements in the way which you feel best represents your behavior toward the child. Base your ratings on your own experiences with this child over the last month.

Consider each statement separately. There are no “right” or “wrong” responses. In the space provided to the left of each statement, place the number (1 to 5) that best describes how you see your behavior toward your child.

Respond “5” if you think you always behave as described and “1” if you think you never behave that way. Use numbers larger than “3” to show you behave that way more than half the time, and numbers smaller than “3” to show you behave that way less than half the time. This means the more you behave as described, the larger the numbers should be, and the less you behave as described, the smaller the numbers should be. To the extent you are uncertain you behave that way, your response should be “3”.

If an item does not apply to your particular home situation, place a “3” in the rating column. Please make use of the full range of the scale.

RATING SCALE

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>I almost never behave this way</td>
<td>I seldom behave this way</td>
<td>I behave this way about half the time OR I'm not sure how often I behave this way</td>
<td>I often behave this way</td>
<td>I almost always behave this way</td>
</tr>
</tbody>
</table>

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## TO WHAT EXTENT DO YOU........

<table>
<thead>
<tr>
<th>RATING</th>
<th>ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1. Excuse yourself from invited guests when your child asks for help with such things as pasting, sewing, or model building?</td>
</tr>
<tr>
<td>2</td>
<td>2. Require your child to remain seated in the car while you are driving?</td>
</tr>
<tr>
<td>3</td>
<td>3. Give your child things he or she especially likes when he or she is ill?</td>
</tr>
<tr>
<td>4</td>
<td>4. Go to your child quickly when you see his or her feelings are hurt?</td>
</tr>
<tr>
<td>5</td>
<td>5. Find children's books, reference books or records that you and your child can share together?</td>
</tr>
<tr>
<td>6</td>
<td>6. Explain to your child the consequences related to his or her behavior?</td>
</tr>
<tr>
<td>7</td>
<td>7. Restrict the times your child can have friends over to play?</td>
</tr>
<tr>
<td>8</td>
<td>8. Find crafts such as painting, coloring, woodworking or needlework you and your child can do together on cold, rainy days?</td>
</tr>
<tr>
<td>9</td>
<td>9. Listen when your child tells you of a disagreement he or she has had with another child?</td>
</tr>
<tr>
<td>10</td>
<td>10. Interrupt a telephone conversation to assist your child if he or she can't find such things as scissors, thread or paste?</td>
</tr>
<tr>
<td>11</td>
<td>11. Require your child to put away his or her clothes?</td>
</tr>
<tr>
<td>12</td>
<td>12. Enforce your child's established bedtimes when he or she ignores them?</td>
</tr>
<tr>
<td>13</td>
<td>13. Restrict the kinds of food your child eats?</td>
</tr>
<tr>
<td>14</td>
<td>14. Listen to your child when he or she is upset even though you feel he or she has nothing to be upset about?</td>
</tr>
</tbody>
</table>
### RATING SCALE

<table>
<thead>
<tr>
<th>I almost never behave this way</th>
<th>I seldom behave this way</th>
<th>I behave this way about half the time OR I'm not sure how often I behave this way</th>
<th>I often behave this way</th>
<th>I almost always behave this way</th>
</tr>
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<td>5</td>
</tr>
</tbody>
</table>

### TO WHAT EXTENT DO YOU

**RATING** | **ITEM**
---|---
15. | Tell your spouse of your annoyance with a neighbor or employer while your child is listening?
16. | Insist your child speak politely to you as opposed to being sassy?
17. | Remind your child when he or she forgets to do daily household chores?
18. | Explain to your child, when he or she behaves in an unacceptable way, your reasons for not approving that kind of behavior?
19. | Hold, pat or hug your child?
20. | Point out to your child the acceptable choices of behavior when he or she misbehaves?
21. | Maintain the limits you have set for your child’s television watching?
22. | Change plans to attend a night meeting so you can be with your child if he or she becomes ill?
23. | Go immediately to your child when you see him or her hurt from a fall off a bicycle?
24. | Disagree with your spouse when your child is present?
25. | Ask your child for his or her reasons when he or she misbehaves?
26. | Go to your child quickly when you hear him or her sobbing?
27. | Get out of bed at night to go to your child as soon as you hear him or her crying?
28. | Let your child know that you are afraid during fear provoking situations such as storms?
29. | Make special efforts to stay with your child when he or she is ill?
30. | Hug or kiss your spouse in the presence of your child?
### RATING SCALE

<table>
<thead>
<tr>
<th>I almost never behave this way</th>
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<th>I often behave this way</th>
<th>I almost always behave this way</th>
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<tr>
<td>1</td>
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<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

### TO WHAT EXTENT DO YOU......

<table>
<thead>
<tr>
<th>RATING</th>
<th>ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____</td>
<td>31. Help your child to recognize another person’s point of view?</td>
</tr>
<tr>
<td>_____</td>
<td>32. Take your child with you when you visit friends?</td>
</tr>
<tr>
<td>_____</td>
<td>33. Tell your child when you are in agreement with him or her?</td>
</tr>
<tr>
<td>_____</td>
<td>34. Cry if you feel like crying when your child is present?</td>
</tr>
<tr>
<td>_____</td>
<td>35. Work together with your child on household and yard cleaning tasks?</td>
</tr>
<tr>
<td>_____</td>
<td>36. Hold, pat and/or hug your child when other children are watching?</td>
</tr>
</tbody>
</table>

Thank you.
TIME 1: FATHER: PAGE 1

INFORMATION SHEET: TIME 1

IDENTIFICATION 

DATE OF RATING  

1. FATHER'S OCCUPATION  

2. Check your highest educational level. 
   - Some High School
   - High School Graduate
   - Some College or Technical Training
   - BA/BS
   - Some Graduate Work
   - MA/MS
   - Doctorate
   - Other

3. Your age in years
   - 20 or under
   - 21 to 25
   - 26 to 30
   - 31 to 35
   - 36 to 40
   - 41 to 45
   - 46 to 50

4. Do you already know the sex of your infant? yes no

5. Are you concerned about specific aspects of your child's health?
   - yes
   - no
   If yes, please explain

6. Are you concerned about specific aspects of your child's growth and development?
   - yes
   - no
   If yes, please explain

GO TO NEXT PAGE........
We are interested in learning more about the impact that a newborn has on the older child and the expectations that parents may have regarding this new relationship.

Before you begin to rate the items, have firmly in mind this older child you are rating. Consider only the behavior of that child over the past month.

Base your ratings on your own experience with your child. Consider only your own impressions. As much as possible, ignore what others have said about your child. Consider each question independently. Base ratings on outward behavior you actually observe. Do not try to interpret what might be going on in the child's mind.

**RATING SCALE**

<table>
<thead>
<tr>
<th>He or she</th>
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</tr>
</thead>
<tbody>
<tr>
<td>almost never behaves that way</td>
<td>seldom behaves that way</td>
<td>behaves that way about half the time or I'm not sure</td>
<td>often behaves that way</td>
<td>almost always behaves that way</td>
</tr>
</tbody>
</table>

| 1 | 2 | 3 | 4 | 5 |

**DOES YOUR OLDER CHILD......**

_1. Show interest in books about new babies?_
_2. Talk about what the baby will be able to do?_
_3. Ask to care for the baby?_
_4. Fuss about going to bed at night?_
_5. Have "bad" dreams?_
_6. Seem to be generally happy, smiling on waking up?_
_7. Attempt to come into your bed at night?_
_8. Have a good appetite?_
_9. Require assistance in eating if food is cut and ready to eat?_
_10. Refuse particular food groups?_

GO TO NEXT PAGE..............
RATING SCALE

<table>
<thead>
<tr>
<th>Almost Never</th>
<th>Seldom</th>
<th>About Half the Time</th>
<th>Often</th>
<th>Almost Always</th>
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<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

DOES YOUR OLDER CHILD

RATING ITEM

11. Seem to enjoy mealtime?
12. Make himself/herself easily understood by people outside the immediate family?
13. Call self "baby" or "I'm little"?
14. Start conversations with you or others?
15. Say "I can't" when you know he/she can?
16. Willingly go to the toilet?
17. Resist efforts to toilet train?
18. Stay dry during the night?
19. Have accidents, either wet or soiled?
20. Follow you everywhere around the house?
21. Become upset when you leave him/her alone for a few minutes?
22. Use a security object during the day?
23. Use a security object for sleeping?
24. Have temper tantrums or out of control behavior?
25. Play quietly alone for periods of a half hour or longer?
26. Ask you to play?
27. Seek comfort when upset?
28. Whine when asked to do something?
29. Explore new surroundings?
DOES YOUR OLDER CHILD......

____ 30. Understand spoken instructions without being shown what to do?
____ 31. Tell you what he/she wants, rather than just using gestures?
____ 32. Listen to you when you talk to him or her?
____ 33. Misbehave in a structured situation such as church or a restaurant?
____ 34. Ask to play with friends?
____ 35. Suggest things the family can do together?
____ 36. Share his/her things willingly with friends?
____ 37. Show affection freely to people he/she likes?
____ 38. Demand to have his/her own way when playing?
____ 39. Do the things you ask?
____ 40. Finish projects that he/she starts?
____ 41. Laugh?
____ 42. Cry easily?
____ 43. Fear things such as animals, new places, dark?
____ 44. Whine when he/she wants something he/she can't have?
____ 45. Cuddle with you?
____ 46. Ask questions about the pregnancy and birth?
____ 47. Want to feel the baby moving?
____ 48. Ask questions about the baby?
____ 49. Ask when the baby will come?
____ 50. Discuss naming the baby?  GO ON TO NEXT PAGE.....
OLDER CHILD EXPECTATIONS INVENTORY: TIME 1

RATING SCALE

<table>
<thead>
<tr>
<th>He or she will almost never behave that way</th>
<th>He or she will seldom behave that way</th>
<th>He or she will behave that way about half the time or I'm not sure</th>
<th>He or she will often behave that way</th>
<th>He or she will almost always behave that way</th>
</tr>
</thead>
</table>

AFTER THE BABY IS BORN, TO WHAT EXTENT DO YOU EXPECT YOUR OLDER CHILD TO.........................

RATING ITEM

___ 1. Seem pleased with the new baby?
___ 2. Ask to hold and care for the new baby?
___ 3. Want to be involved with the new baby?
___ 4. Increase his/her demands of you?
___ 5. Understand that you have to feed the baby instead of play?
___ 6. Show the baby to others?
___ 7. Continue his/her normal daily routine?
___ 8. Ask to be cuddled?
___ 9. Want to play with the baby's toys?
___10. Drink from the baby's bottle or want to nurse?
___11. Hit or mistreat the baby?
___12. Ask you to give the baby to someone else?
___13. Enjoy going to school or daycare?
___14. Want to be with you?
___15. Have toileting accidents?
___16. Need help with things he/she was doing alone?
___17. Avoid involvement with the baby?

GO TO NEXT PAGE...........
AFTER THE BABY IS BORN, TO WHAT EXTENT DO YOU EXPECT YOUR OLDER CHILD TO

RATING ITEM

___18. Ask questions about the baby?
___19. Talk about what the baby can do?
___20. Ask to care for the baby?
___21. Act jealous?
___22. Cooperate with your requests?
___23. Change his/her behavior?

Using the same rating scale: HAS YOUR OLDER CHILD........

___24. Talked with you about the birth of the new baby?
___25. Gone with mother for prenatal visits?
___26. Had the opportunity to feel the baby moving?

GO TO NEXT PAGE....
IOWA PARENT BEHAVIOR INVENTORY (Father Form)

Sedahlia Jasper Crase, Sam Clark, Damaris Pease
Department of Child Development
Iowa State University

CHILD’S NAME ______________________________ DATE OF RATING ________________

CHILD’S SEX __________ CHILD’S BIRTHDATE ________________________________
(month, day, year)

FATHER’S NAME ______________________________ ______________________________

We are interested in learning more about how parents and children interact. The following statements represent a variety of ways that parents may interact with their children. Before you begin, have firmly in mind the child you are rating. Please respond to the statements in the way which you feel best represents your behavior toward the child. Base your ratings on your own experiences with this child over the last month.

Consider each statement separately. There are no “right” or “wrong” responses. In the space provided to the left of each statement, place the number (1 to 5) that best describes how you see your behavior toward your child.

Respond “5” if you think you always behave as described and “1” if you think you never behave that way. Use numbers larger than “3” to show you behave that way more than half the time, and numbers smaller than “3” to show you behave that way less than half the time. This means the more you behave as described, the larger the numbers should be, and the less you behave as described, the smaller the numbers should be.

If you are uncertain you behave that way, your response should be “3”. If an item does not apply to your home situation, place a “3” in the rating column. Please make use of the full range of the scale.

RATING SCALE

<table>
<thead>
<tr>
<th>I almost never behave this way</th>
<th>I seldom behave this way</th>
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<tr>
<th>RATING</th>
<th>ITEM</th>
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<tbody>
<tr>
<td>1</td>
<td>Require your child to remain seated in the car while you are driving?</td>
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<tr>
<td>2</td>
<td>Give your child things he or she especially likes when he or she is ill?</td>
</tr>
<tr>
<td>3</td>
<td>Go to your child quickly when you see his or her feelings are hurt?</td>
</tr>
<tr>
<td>4</td>
<td>Find children's books, reference books or records that you and your child can share together?</td>
</tr>
<tr>
<td>5</td>
<td>Suggest to your child outdoor games that you and he or she might play together?</td>
</tr>
<tr>
<td>6</td>
<td>Explain to your child the consequences related to his or her behavior?</td>
</tr>
<tr>
<td>7</td>
<td>Help your child select items that interest him or her at the store?</td>
</tr>
<tr>
<td>8</td>
<td>Express your appreciation when your child carries his or her dishes to the sink?</td>
</tr>
<tr>
<td>9</td>
<td>Enforce rules for your child concerning pushing or shoving of other children?</td>
</tr>
<tr>
<td>10</td>
<td>Find crafts such as painting, coloring, woodworking or needlework you and your child can do together on cold, rainy days?</td>
</tr>
<tr>
<td>11</td>
<td>Maintain the limits you set for your child's behavior in public places like basketball games, church or grocery stores?</td>
</tr>
<tr>
<td>12</td>
<td>Listen without interrupting when your child tells you reasons for his or her misbehavior?</td>
</tr>
<tr>
<td>13</td>
<td>Require your child to put away his or her clothes?</td>
</tr>
<tr>
<td>14</td>
<td>Enforce your child's established bedtimes when he or she ignores them?</td>
</tr>
</tbody>
</table>
RATING SCALE

I almost never
I seldom
I behave this way about
I often
I almost always
behave
behave
half the time OR I'm
behave this way
not sure how often I
behave this way

1 2 3 4 5

TO WHAT EXTENT DO YOU ..........

RATING ITEM

15. Listen to your child when he or she is upset even though you feel he or she has nothing to be upset about?
16. Tell your child that you are unhappy when he or she tracks mud into the house?
17. Participate with your child in storytelling and reading?
18. Insist your child speak politely to you as opposed to being sassy?
19. Have rules about the places your child can go alone?
20. Remind your child when he or she forgets to do daily household chores?
21. Hold, pat or hug your child?
22. Point out to your child the acceptable choices of behavior when he or she misbehaves?
23. Talk with your child about his or her fears of the dark, of animals or of school failures?
24. Change plans to attend a night meeting so you can be with your child if he or she becomes ill?
25. Go immediately to your child when you see him or her hurt from a fall off a bicycle?
26. Ask your child for his or her reasons when he or she misbehaves?
27. Go to your child quickly when you hear him or her sobbing?
28. Ask your child for his or her opinion in family decisions?
29. Get out of bed at night to go to your child as soon as you hear him or her crying?
30. Make special efforts to stay with your child when he or she is ill?
31. Hug or kiss your spouse in the presence of your child?
32. Consider suggestions made by your child?
<table>
<thead>
<tr>
<th>RATING ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>33. Suggest to your child indoor games that you and he or she might play</td>
</tr>
<tr>
<td>together?</td>
</tr>
<tr>
<td>34. Tell your child why you are angry, irritable or impatient when he or</td>
</tr>
<tr>
<td>she is not to blame?</td>
</tr>
<tr>
<td>35. Help your child to recognize another person's point of view?</td>
</tr>
<tr>
<td>36. Hold, pat and/or hug your child when other children are watching?</td>
</tr>
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</table>

Thank you.
APPENDIX B: QUESTIONNAIRE PACKET, TIME 2
Dear Parents,

Congratulations on your new baby.

Thank you very much for participating in my research study on sibling and newborn behaviors. Enclosed you will find questionnaires for Time 2 to be filled out when your baby is approximately four weeks old. Please return the questionnaires to me in the enclosed stamped envelope.

If you would like a summary of results of the study, please indicate so on your forms.

Again, thank you for your participation. This project would not have been possible without your help.

Sincerely,

Jean Nalsmith Gullicks
INFORMATION SHEET: TIME 2

IDENTIFICATION#____________________

DATE OF RATING____________________

1. INFANT'S BIRTHDATE______________ 2. INFANT'S SEX_______

3. INFANT'S BIRTH WEIGHT___________

4. OLDER CHILD'S AGE AT TIME OF BIRTH_________________________
   years months

5. OLDER CHILD'S SEX________________

6. Please indicate the number of days you were hospitalized ______

7. Did you have a cesaerean birth?_____yes_____no

8. Were Mother and baby discharged from the hospital on the same day?
   ______yes______no
   If no, how many more days did the baby remain hospitalized?_____

9. Was your baby in an intensive care unit following birth?_______
   If yes, specify number of days or weeks__________________________.

   ________________________________
   DID YOUR OLDER CHILD...........

10. Hold or touch the new baby in the hospital?_____yes____no
    If yes, approximately how often?__________________________

11. See the new baby, but not touch or hold him/her at any time in the
    hospital?______yes______no
    If yes, approximately how often?__________________________

12. Visit Mom in the hospital?_____yes____no
    If yes, approximately how often?__________________________

13. Talk to Mom by telephone while she was hospitalized?____yes____no
    If yes, approximately how often?__________________________
14. Please check all responses that are appropriate for your older child regarding the care he or she received while Mother was hospitalized for the birth of the new baby.

- Cared for in same situation as before birth during the day
- Cared for in child's own home by a relative or close friend
- Cared for by child's father
- Stayed at friend's or relative's home during Mother's hospitalization
- Cared for by person with whom the child was unfamiliar

SIBLING BEHAVIOR INVENTORY: TIME 2

We are interested in learning more about the impact that a newborn has on the older child and the expectations that parents may have regarding this new relationship.

Before you begin to rate the items, have firmly in mind this older child you are rating. Consider only the behavior of that child during the past week.

Base your ratings on your own experience with your child. Consider only your own impressions. As much as possible, ignore what others have said about your child. Consider each question independently. Base ratings on outward behavior you actually observe. Do not try to interpret what might be going on in the child's mind.

RATING SCALE

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<th>He or she almost never behaves that way</th>
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DOES YOUR OLDER CHILD.....

RATING ITEM

1. Show interest in books about new babies?

2. Talk about what the baby can do?

GO TO NEXT PAGE....
RATING SCALE

<table>
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<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Never</td>
<td>Seldom</td>
<td>About Half the Time or Not Sure</td>
<td>Often</td>
<td>Almost Always</td>
</tr>
</tbody>
</table>

DOES YOUR OLDER CHILD

3. Ask to care for the baby?
4. Fuss about going to bed at night?
5. Have "bad" dreams?
6. Seem to be generally happy, smiling on waking up?
7. Attempt to come into your bed at night?
8. Have a good appetite?
9. Require assistance in eating if food is cut and ready to eat?
10. Refuse particular food groups?
11. Seem to enjoy mealtimes?
12. Make himself/herself easily understood by people outside the immediate family?
13. Call self "baby" or "I'm little"?
14. Start conversations with you or others?
15. Say "I can't" when you know he/she can?
16. Willingly go to the toilet?
17. Resist efforts to toilet train?
18. Stay dry during the night?
19. Have accidents, either wet or soiled?
20. Follow you everywhere around the house?
21. Become upset when you leave him/her alone for a few minutes?
22. Use a security object during the day?

GO TO NEXT PAGE............
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DOES YOUR OLDER CHILD

RATING ITEM

23. Use a security object for sleeping?
24. Have temper tantrums or out of control behavior?
25. Play quietly alone for periods of a half hour or longer?
26. Ask you to play?
27. Seek comfort when upset?
28. Whine when asked to do something?
29. Explore new surroundings?
30. Understand spoken instructions without being shown what to do?
31. Tell you what he/she wants, rather than just using gestures?
32. Listen to you when you talk to him or her?
33. Misbehave in a structured situation such as church or a restaurant?
34. Ask to play with friends?
35. Suggest things the family can do together?
36. Share his/her things willingly with friends?
37. Show affection freely to people he/she likes?
38. Demand to have his/her own way when playing?
39. Do the things you ask?
40. Finish projects that he/she starts?
41. Laugh?

GO TO NEXT PAGE
1. Seem pleased with the new baby?
2. Ask to hold and care for the new baby?
3. Want to be involved with the new baby?
4. Increase his/her demands of you?
5. Understand that you have to feed the baby instead of play?
6. Show the baby to others?
7. Continue her/her normal daily routine?
8. Ask to be cuddled?
9. Want to play with the baby's toys?  

GO TO NEXT PAGE...
Rating Scale

<table>
<thead>
<tr>
<th>Rating</th>
<th>Item</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Drink from the baby's bottle or want to nurse?’</td>
</tr>
<tr>
<td>2</td>
<td>Hit or mistreat the baby?</td>
</tr>
<tr>
<td>3</td>
<td>Ask you to give the baby to someone else?</td>
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<td>4</td>
<td>Enjoy going to school or daycare?</td>
</tr>
<tr>
<td>5</td>
<td>Want to stay with you?</td>
</tr>
<tr>
<td>6</td>
<td>Have toileting accidents?</td>
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<td>7</td>
<td>Need help with things he/she was doing alone?</td>
</tr>
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<tr>
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<td>Act jealous?</td>
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<tr>
<td>13</td>
<td>Cooperate with your requests?</td>
</tr>
<tr>
<td>14</td>
<td>Change his/her behavior?</td>
</tr>
</tbody>
</table>

GO TO NEXT PAGE....
JOHNS HOPKINS UNIVERSITY

IOWA PARENT BEHAVIOR INVENTORY (Mother Form)

Sedahlia Jasper Crase, Sam Clark, Damaris Pease
Department of Child Development
Iowa State University

CHILD'S NAME _____________________________ DATE OF RATING ________________
CHILD'S SEX ________________ CHILD'S BIRTHDATE ____________ (month, day, year)
MOTHER'S NAME _____________________________

We are interested in learning more about how parents and children interact. The following statements represent a variety of ways that parents may interact with their children. Before you begin, have firmly in mind the child you are rating. Please respond to the statements in the way which you feel best represents your behavior toward the child. Base your ratings on your own experiences with this child over the last month.

Consider each statement separately. There are no "right" or "wrong" responses. In the space provided to the left of each statement, place the number (1 to 5) that best describes how you see your behavior toward your child. Respond "5" if you think you always behave as described and "1" if you think you never behave that way. Use numbers larger than "3" to show you behave that way more than half the time, and numbers smaller than "3" to show you behave that way less than half the time. This means the more you behave as described, the larger the numbers should be, and the less you behave as described, the smaller the numbers should be. To the extent you are uncertain you behave that way, your response should be "3". If an item does not apply to your particular home situation, place a "3" in the rating column. Please make use of the full range of the scale.

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### Rating Scale

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### To What Extent Do You........

#### Rating

<table>
<thead>
<tr>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Excuse yourself from invited guests when your child asks for help with such things as pasting, sewing, or model building?</td>
</tr>
<tr>
<td>2. Require your child to remain seated in the car while you are driving?</td>
</tr>
<tr>
<td>3. Give your child things he or she especially likes when he or she is ill?</td>
</tr>
<tr>
<td>4. Go to your child quickly when you see his or her feelings are hurt?</td>
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<tr>
<td>5. Find children's books, reference books or records that you and your child can share together?</td>
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<tr>
<td>6. Explain to your child the consequences related to his or her behavior?</td>
</tr>
<tr>
<td>7. Restrict the times your child can have friends over to play?</td>
</tr>
<tr>
<td>8. Find crafts such as painting, coloring, woodworking or needlework you and your child can do together on cold, rainy days?</td>
</tr>
<tr>
<td>9. Listen when your child tells you of a disagreement he or she has had with another child?</td>
</tr>
<tr>
<td>10. Interrupt a telephone conversation to assist your child if he or she can't find such things as scissors, thread or paste?</td>
</tr>
<tr>
<td>11. Require your child to put away his or her clothes?</td>
</tr>
<tr>
<td>12. Enforce your child's established bedtimes when he or she ignores them?</td>
</tr>
<tr>
<td>13. Restrict the kinds of food your child eats?</td>
</tr>
<tr>
<td>14. Listen to your child when he or she is upset even though you feel he or she has nothing to be upset about?</td>
</tr>
</tbody>
</table>
RATING SCALE

1 2 3 4 5

I almost never I seldom I behave this way about I often I almost always
behave half the time OR I'm behave this way
this way not sure how often I behave this way

TO WHAT EXTENT DO YOU...........

RATING ITEM

_____ 15. Tell your spouse of your annoyance with a neighbor or employer while your child is listening?
_____ 16. Insist your child speak politely to you as opposed to being sassy?
_____ 17. Remind your child when he or she forgets to do daily household chores?
_____ 18. Explain to your child, when he or she behaves in an unacceptable way, your reasons for not approving that kind of behavior?
_____ 19. Hold, pat or hug your child?
_____ 20. Point out to your child the acceptable choices of behavior when he or she misbehaves?
_____ 21. Maintain the limits you have set for your child's television watching?
_____ 22. Change plans to attend a night meeting so you can be with your child if he or she becomes ill?
_____ 23. Go immediately to your child when you see him or her hurt from a fall off a bicycle?
_____ 24. Disagree with your spouse when your child is present?
_____ 25. Ask your child for his or her reasons when he or she misbehaves?
_____ 26. Go to your child quickly when you hear him or her sobbing?
_____ 27. Get out of bed at night to go to your child as soon as you hear him or her crying?
_____ 28. Let your child know that you are afraid during fear provoking situations such as storms?
_____ 29. Make special efforts to stay with your child when he or she is ill?
_____ 30. Hug or kiss your spouse in the presence of your child?
RATING SCALE

<table>
<thead>
<tr>
<th>I almost never behave this way</th>
<th>I seldom behave this way</th>
<th>I behave this way about half the time OR I'm not sure how often I behave this way</th>
<th>I often behave this way</th>
<th>I almost always behave this way</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>3</td>
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<td>5</td>
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</tbody>
</table>

**TO WHAT EXTENT DO YOU.......**

**RATING** | **ITEM**
---|---
| 31. Help your child to recognize another person's point of view?
| 32. Take your child with you when you visit friends?
| 33. Tell your child when you are in agreement with him or her?
| 34. Cry if you feel like crying when your child is present?
| 35. Work together with your child on household and yard cleaning tasks?
| 36. Hold, pat and/or hug your child when other children are watching?

Thank you.
We are interested in learning more about the impact that a newborn has on the older child and the expectations that parents may have regarding this new relationship.

Before you begin to rate the items, have firmly in mind this older child you are rating. Consider only the behavior of that child during the past week.

Base your ratings on your own experience with your child. Consider only your own impressions. As much as possible, ignore what others have said about your child. Consider each question independently. Base ratings on outward behavior you actually observe. Do not try to interpret what might be going on in the child's mind.

RATING SCALE

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>RATING ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Show interest in books about new babies?</td>
</tr>
<tr>
<td>2. Talk about what the baby can do?</td>
</tr>
<tr>
<td>3. Ask to hold and care for the baby?</td>
</tr>
<tr>
<td>4. Fuss about going to bed at night?</td>
</tr>
<tr>
<td>5. Have &quot;bad&quot; dreams?</td>
</tr>
<tr>
<td>6. Seem to be generally happy, smiling on waking up?</td>
</tr>
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</table>

GO TO NEXT PAGE..........
RATING SCALE

<table>
<thead>
<tr>
<th></th>
<th>1</th>
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<tbody>
<tr>
<td><strong>RATING ITEM</strong></td>
<td></td>
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<tr>
<td>7. Attempt to come into your bed at night?</td>
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<td>8. Have a good appetite?</td>
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<td>9. Require assistance in eating if food is cut and ready to eat?</td>
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<td>10. Refuse particular food groups?</td>
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<tr>
<td>11. Seem to enjoy mealt ime?</td>
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<td>12. Make himself/herself easily understood by people outside the immediate family?</td>
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<tr>
<td>13. Call self &quot;baby&quot; or &quot;I'm little&quot;?</td>
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<td>14. Start conversations with you or others?</td>
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<td>15. Say &quot;I can't&quot; when you know he/she can?</td>
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<tr>
<td>16. Willingly go to the toilet?</td>
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<td>17. Resist efforts to toilet train?</td>
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<td>18. Stay dry during the night?</td>
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<td>19. Have accidents, either wet or soiled?</td>
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<td>20. Follow you everywhere around the house?</td>
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<tr>
<td>21. Become upset when you leave him/her alone for a few minutes?</td>
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<tr>
<td>22. Use a security object during the day?</td>
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<tr>
<td>23. Use a security object for sleeping?</td>
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<td>24. Have temper tantrums or out of control behavior?</td>
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<td>25. Play quietly alone for periods of a half hour or longer?</td>
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<td>26. Ask you to play?</td>
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</table>

GO TO NEXT PAGE............
RATING SCALE

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<tr>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Almost Never</strong></td>
<td><strong>Seldom</strong></td>
<td><strong>About Half the Time</strong></td>
<td><strong>Often</strong></td>
<td><strong>Almost Always</strong> or <strong>Not Sure</strong></td>
</tr>
</tbody>
</table>

DOES YOUR OLDER CHILD.............

RATING ITEM

- **27.** Seek comfort when upset?
- **28.** Whine when asked to do something?
- **29.** Explore new surroundings?
- **30.** Understand spoken instructions without being shown what to do?
- **31.** Tell you what he/she wants, rather than just using gestures?
- **32.** Listen to you when you talk to him or her?
- **33.** Misbehave in a structured situation such as church or a restaurant?
- **34.** Ask to play with friends?
- **35.** Suggest things the family can do together?
- **36.** Share his/her things willingly with friends?
- **37.** Show affection freely to people he/she likes?
- **38.** Demand to have his/her own way when playing?
- **39.** Do the things you ask?
- **40.** Finish projects that he/she starts?
- **41.** Laugh?
- **42.** Cry easily?
- **43.** Fear things such as animals, new places, dark?
- **44.** Whine when he/she wants something he/she can't have?
- **45.** Cuddle with you?

GO TO NEXT PAGE.............
OLDER CHILD OBSERVATION INVENTORY: TIME 2

RATING SCALE

<table>
<thead>
<tr>
<th>He or she</th>
<th>He or she</th>
<th>He or she</th>
<th>He or she</th>
<th>He or she</th>
</tr>
</thead>
<tbody>
<tr>
<td>almost never</td>
<td>seldom</td>
<td>behaves that way</td>
<td>often</td>
<td>almost</td>
</tr>
<tr>
<td>behaves that way</td>
<td>behaves</td>
<td>way about half</td>
<td>behaves</td>
<td>always behaves</td>
</tr>
<tr>
<td>not sure</td>
<td>that way</td>
<td>the time or I'm that way</td>
<td>that way</td>
<td>that way</td>
</tr>
</tbody>
</table>

1 2 3 4 5

TO WHAT EXTENT DOES YOUR OLDER CHILD...

RATING ITEM

1. Seem pleased with the new baby?
2. Want to be involved with the new baby?
3. Increase his/her demands of you?
4. Understand that you have to care for the baby instead of play?
5. Show the baby to others?
6. Ask to be cuddled?
7. Want to play with the baby's toys?
8. Drink from the baby's bottle or want to nurse?
9. Hit or mistreat the baby?
10. Ask you to give the baby to someone else?
11. Enjoy going to school or daycare?
12. Want to stay with you?
13. Need help with things he/she was doing alone?
14. Avoid involvement with the baby?
15. Ask questions about the baby?
16. Talk about what the baby can do?
17. Act jealous?
18. Cooperate with your requests?
19. Show behavior changes since your infant's birth? GO ON.....
Iowa Parent Behavior Inventory (Father Form)

Sedahlia Jasper Crase, Sam Clark, Damaris Pease
Department of Child Development
Iowa State University

Child's Name ____________________________ Date of Rating _________________
Child's Sex __________ Child's Birthdate (month, day, year)

Father's Name ____________________________

We are interested in learning more about how parents and children interact. The following statements represent a variety of ways that parents may interact with their children. Before you begin, have firmly in mind the child you are rating. Please respond to the statements in the way which you feel best represents your behavior toward the child. Base your ratings on your own experiences with this child over the last month.

Consider each statement separately. There are no "right" or "wrong" responses. In the space provided to the left of each statement, place the number (1 to 5) that best describes how you see your behavior toward your child.

Respond "5" if you think you always behave as described and "1" if you think you never behave that way. Use numbers larger than "3" to show you behave that way more than half the time, and numbers smaller than "3" to show you behave that way less than half the time. This means the more you behave as described, the larger the numbers should be, and the less you behave as described, the smaller the numbers should be.

If you are uncertain you behave that way, your response should be "3". If an item does not apply to your home situation, place a "3" in the rating column. Please make use of the full range of the scale.

RATING SCALE

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>I almost never behave this way</td>
<td>I seldom behave this way</td>
<td>I behave this way about half the time OR I'm not sure how often I behave this way</td>
<td>I often behave this way</td>
<td>I almost always behave this way</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>RATING</th>
<th>ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Require your child to remain seated in the car while you are driving?</td>
</tr>
<tr>
<td>2.</td>
<td>Give your child things he or she especially likes when he or she is ill?</td>
</tr>
<tr>
<td>3.</td>
<td>Go to your child quickly when you see his or her feelings are hurt?</td>
</tr>
<tr>
<td>4.</td>
<td>Find children's books, reference books or records that you and your child can share together?</td>
</tr>
<tr>
<td>5.</td>
<td>Suggest to your child outdoor games that you and he or she might play together?</td>
</tr>
<tr>
<td>6.</td>
<td>Explain to your child the consequences related to his or her behavior?</td>
</tr>
<tr>
<td>7.</td>
<td>Help your child select items that interest him or her at the store?</td>
</tr>
<tr>
<td>8.</td>
<td>Express your appreciation when your child carries his or her dishes to the sink?</td>
</tr>
<tr>
<td>9.</td>
<td>Enforce rules for your child concerning pushing or shoving of other children?</td>
</tr>
<tr>
<td>10.</td>
<td>Find crafts such as painting, coloring, woodworking or needlework you and your child can do together on cold, rainy days?</td>
</tr>
<tr>
<td>11.</td>
<td>Maintain the limits you set for your child's behavior in public places like basketball games, church or grocery stores?</td>
</tr>
<tr>
<td>12.</td>
<td>Listen without interrupting when your child tells you reasons for his or her misbehavior?</td>
</tr>
<tr>
<td>13.</td>
<td>Require your child to put away his or her clothes?</td>
</tr>
<tr>
<td>14.</td>
<td>Enforce your child's established bedtimes when he or she ignores them?</td>
</tr>
</tbody>
</table>
TO WHAT EXTENT DO YOU.......  

<table>
<thead>
<tr>
<th>RATING</th>
<th>ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Listen to your child when he or she is upset even though you feel he or she has nothing to be upset about?</td>
</tr>
<tr>
<td>2</td>
<td>Tell your child that you are unhappy when he or she tracks mud into the house?</td>
</tr>
<tr>
<td>3</td>
<td>Participate with your child in storytelling and reading?</td>
</tr>
<tr>
<td>4</td>
<td>Insist your child speak politely to you as opposed to being sassy?</td>
</tr>
<tr>
<td>5</td>
<td>Have rules about the places your child can go alone?</td>
</tr>
<tr>
<td>1</td>
<td>Remind your child when he or she forgets to do daily household chores?</td>
</tr>
<tr>
<td>2</td>
<td>Hold, pat or hug your child?</td>
</tr>
<tr>
<td>3</td>
<td>Point out to your child the acceptable choices of behavior when he or she misbehaves?</td>
</tr>
<tr>
<td>4</td>
<td>Talk with your child about his or her fears of the dark, of animals or of school failures?</td>
</tr>
<tr>
<td>5</td>
<td>Change plans to attend a night meeting so you can be with your child if he or she becomes ill?</td>
</tr>
<tr>
<td>1</td>
<td>Go immediately to your child when you see him or her hurt from a fall off a bicycle?</td>
</tr>
<tr>
<td>2</td>
<td>Ask your child for his or her reasons when he or she misbehaves?</td>
</tr>
<tr>
<td>3</td>
<td>Go to your child quickly when you hear him or her sobbing?</td>
</tr>
<tr>
<td>4</td>
<td>Ask your child for his or her opinion in family decisions?</td>
</tr>
<tr>
<td>5</td>
<td>Get out of bed at night to go to your child as soon as you hear him or her crying?</td>
</tr>
<tr>
<td>1</td>
<td>Make special efforts to stay with your child when he or she is ill?</td>
</tr>
<tr>
<td>2</td>
<td>Hug or kiss your spouse in the presence of your child?</td>
</tr>
<tr>
<td>3</td>
<td>Consider suggestions made by your child?</td>
</tr>
</tbody>
</table>
### RATING SCALE

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I almost never behave this way</td>
</tr>
<tr>
<td>2</td>
<td>I seldom behave this way</td>
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<tr>
<td>3</td>
<td>I behave this way about half the time OR I'm not sure how often I behave this way</td>
</tr>
<tr>
<td>4</td>
<td>I often behave this way</td>
</tr>
<tr>
<td>5</td>
<td>I almost always behave this way</td>
</tr>
</tbody>
</table>

### TO WHAT EXTENT DO YOU........

#### RATING ITEM

1. **33. Suggest to your child indoor games that you and he or she might play together?**
2. **34. Tell your child why you are angry, irritable or impatient when he or she is not to blame?**
3. **35. Help your child to recognize another person’s point of view?**
4. **36. Hold, pat and/or hug your child when other children are watching?**

Thank you.
APPENDIX C: GENERAL EQUATIONS FOR BEHAVIOR INVENTORIES
EQUATIONS FOR THREE BEHAVIOR INVENTORIES

Difference Score = Observed Behavior Score - Expected Behavior Score.\(^a\)

**Older Child Expectations/Observations Inventory**

<table>
<thead>
<tr>
<th>Positive Items</th>
<th>Negative Items</th>
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<tbody>
<tr>
<td>1</td>
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**Infant Expectations/Observations Inventory**

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<th>Negative Items</th>
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<tbody>
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**Parental Self Expectations/Observations Inventory**

<table>
<thead>
<tr>
<th>Positive Items</th>
<th>Negative Items</th>
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\(^a\)The equations for mothers and fathers are identical since they include identical items.
**EQUATION FOR SIBLING BEHAVIOR INVENTORY**

Sibling Behavior Inventory Change Score = Sibling Behavior Inventory
Time 2 - Sibling Behavior Inventory Time 1.

<table>
<thead>
<tr>
<th>Positive Items</th>
<th>Negative Items</th>
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<tbody>
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\(^a\)The equations for mothers and fathers are identical since they include identical items.