The Child's Sex and Birth Ordinal Position: Its Effects Upon Fathers' Interaction With Their Natural Five-Year-Old Children in a Selected Provo Utah Mormon Sample

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THE CHILD'S SEX AND BIRTH ORDINAL POSITION: ITS EFFECTS
UPON FATHERS' INTERACTION WITH THEIR NATURAL
FIVE-YEAR-OLD CHILDREN IN A SELECTED
PROVO UTAH MORON SAMPLE

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D. W. B.
CHAPTER 1

INTRODUCTION

This thesis will attempt to summarize the findings of an original study conducted by the author to determine the effects the child's sex and birth ordinal position will have upon the father's use of praise, criticism, and style of interaction with his child. Specifically, this paper will endeavor to answer:

1. Are paternal expectations influenced by their child's sex or birth ordinal position?

2. Will paternal involvement during a child's task performance vary according to the child's sex or birth ordinal position?

3. Will fathers praise and criticise their child at different rates depending upon the child's sex or birth ordinal position?

4. Will fathers show a greater readiness to satisfy their child's curiosity according to the child's sex or birth ordinal position?

5. What effect will the child's sex or birth ordinal position have upon the length of time the father spends with the child?

These are each salient questions for research conducted upon the family and it is hoped that this particular study will
shed some additional light onto the issue of the role of the father in the nuclear family.

The Father's Role in Family Research

Bigner (1970) identified three major approaches to the study of the father in the family:

1. The family unit, developing in accordance to man's evolution, became a monogamous unit in which the father is assigned a significant role.

2. The role of fatherhood became a social invention assigning the father to providing nurturance for both wife and children.

3. The family organization imposes upon the male certain familial duties in exchange for sexual rights with a wife and has defined his role as that of a father as being temporary, peripheral, and relatively immaterial. (p. 357)

Regardless of one's own theoretical postulations concerning the reasons why the father remains in the family unit, there remains an absence of data available in the research literature concerning the father himself and those behavioral variables which make his role significant.

LeMasters (1974) emphatically states that the American father has been ignored by behavioral scientists since the late 1940's. Goree (1948) pictures the American society as the "Motherland" in which the female "has arrogated to herself or has had thrust upon her the dominant role in the rearing of children" (p.116). The father has become vestigal, and he continues saying this has affected American children, particularly males.

Most boys reach and pass adolescence under almost undiluted female authority; their conduct has become regulated by female norms (Gorer, 1948:116).
Kluckhorn (1949) agrees by declaring that many American men are so wrapped up in the pursuit of success that they largely abdicate control over their children's upbringing to their wives. Lynn (1961) states that our society fails to appreciate the psychological significance of the father in the family. John Nash (1973) further states:

It would seem reasonable to adopt as a hypothesis that Western society is matricentric in its child care, and perhaps one may even regard these opinions to be of sufficient substance to throw the burden of proof on those who would argue otherwise. (p. 353)

This matricentric view of parenthood is reflected in the behavioral science literature. In all the Handbook of Socialization Theory and Research, there are only five specific references to the father in 1140 pages of text (Goslin, 1969). Of 444 papers published from 1963-1968, only eleven utilized data from husbands and/or fathers. Carmichel's comprehensive manual (1954) does not list father in the index. This exclusion of fathers from family research can be cited in many other studies. This exclusion of fathers commonly seems to rest on three assumptions: first, that mothers/wives can accurately report what their husbands do and feel; second, that fathers are unimportant in the child-rearing process and hence do not need to be considered (Bowlby, 1951); third, that fathers are inaccessible to study due to their occupational pursuits (Lynn, 1961; McCandless, 1967). Recently, these popular assumptions have come under attack.
Some studies have concluded that fathers emerge with a much different profile when they themselves are interviewed rather than relying upon reports by mothers only (Fanschel, 1966; LeMasters, 1974; Seeley, 1956; Tasch, 1952). Mueller in a 1970 article states a serious bias results in samples which have included only wives or exwives as respondents. In view of this evidence, research including the father in research designs have greatly increased since 1970.

Tasch (1952) early attacked the assumption of unimportance when she concluded that fathers appeared very active and important in the daily activity of their children. Other studies have basically agreed that the father is important in the child-rearing process although wide variation in the fathers' involvement were also found.

While it remains true that fathers are generally involved in an occupation, it would appear from the research appearing recently on the father that he is accessible if the researcher is willing to make arrangements to include him.

Research on fathering

Bigner's (1970) review found that only two areas had received extensive research. These were: (1) the effects of the father-son relationship on masculine development, and (2) the effects of paternal absence or deprivation on sex-role identification in children.

Essentially, it has been found that sex-role development in boys is facilitated by a warm, nurturant, rewarding father who openly expresses interest in his son's development of culturally
prescribed masculine traits (Mussen & Distler, 1959; Biller & Borstelmann, 1967). Most studies in this area have not utilized actual father-son interaction measures nor correlated the fathers' masculinity with their sons'.

Biller and Weiss (1970) found in their review of the literature on sex-role development among females that the father's particular relationship with his daughter seems very important. He may foster the establishment of a positive female identity by treating her as a female and by encouraging her to act in ways which are considered to be feminine by their society.

Pederson (1976) identified the most frequently employed design for studying paternal influences on child development to be one of comparing children raised in father-absent homes with children reared in father-present homes. Studies have found that the presence or absence of the father is associated with different developmental outcomes and these differences are then associated with the unavailability of the father as a socialization influence or identification figure. Such differences between children raised under the two conditions have been reported in such areas as intellectual level (Deutsh & Brown, 1964), academic attainment (Blanchard & Biller, 1971), cognitive style (Barclay & Cusumano, 1967; Carlsmit, 1964), lower scores in responsibility and leadership (Bronfenbrenner, 1970), moral development (Hoffman, 1971), homosexuality (Nash, 1954; Brown, 1958), delay of gratification (Bach, 1946; Mischel, 1961; Santrock & Wohlford, 1970), sex role identification (Biller, 1968; D'Andrade, 1973; Hetherington, 1966; Lynn, 1961; Sears, 1959).
However, in Hetherington's sample, these differences failed to appear in sons after they had reached the age of five years. Lower motivation for achievement, lower self-esteem, and a higher susceptibility to group influence was found by Bach (1946); a higher incidence of delinquent behavior was cited by McCord, McCord and Thurber (1962); more aggressive behavior was found by Sears et al. (1946); changes appeared in heterosexual interaction patterns among adolescent samples of Hetherington (1972) and Sullivan and Fleshman (1975). This extensive body of research has been well summarized by Biller (1974).

The tendency on the part of some researchers to over-generalize from studies conducted on father-absence literature has been recently criticized by Herzog and Sudia (1973) and Pederson (1976). Technical and methodological weaknesses abound such as a failure to match comparison groups. Thus, paternal-absence effects cannot be separated from other environmental influences (Pederson, 1976). For example, father-absence seems to occur most frequently in the lower-class families or within Negro families (Mischel, 1961; Deutsch & Brown, 1964). Are identified effects then from paternal absence itself or do they stem from racial or cultural differences? In most cases, whenever the father abandons the family, a sharp financial decline occurs, the family goes onto welfare, or the mother must seek employment outside the home. Are those identified differences attributable then to paternal absence or to the socioeconomic impact of the withdrawal of the father's economic support? Pederson (1976) further condemns this research design as being
inherently incapable of producing only limited information on the psychological factors producing such differences and totally incapable of contributing to our knowledge of the father-child relationship.

In addition, social scientists from different fields have as yet been unable to reach agreement concerning the effects of paternal absence or deprivation. Psychological studies have tended to conclude that father-absence produces deleterious effects while sociological studies have tended to show no such effects on children's development (Bigner, 1970).

**Research on Sex-Role Development**

**Composition of sex-role development**

Researchers have tended to differentiate sex-role characteristics into three areas: "sex-role orientation, sex-role preference, and sex-role adoption" (Biller & Börstelmann, 1967). "Sex-role orientation" refers to an individual's evaluation of his own masculinity and/or femininity. "Sex-role preference" refers to an individual's desire to adhere to the cultural prescriptions and proscriptions of the masculine or feminine role. "Sex-role adoption" refers to how masculine or feminine an individual's behavior is judged to be by significant others in this society (Lynn, 1976).

**Theories of sex-role development**

Josselyn (1967) identifies three major sources of sexual identity which help to determine a person's conceptualization of himself and others as being male or female. They are:
1. Inherent biological differences between the sexes;
2. Conceptualizations and mores of the culture in which he is reared;
3. Attitudes of those emotionally meaningful to the child such as parents, teachers, etc. (Josselyn, 1967:38).

Social scientists have long considered the family to be one of the primary agents of socialization. Accordingly, in the U.S., it is typically the parents who interpret the culture to the child and first impose conformity to it. The typical family thus are prominent figures in theories which attempt to explain how the child comes to recognize his own sex and his efforts to contrast himself with a person of the opposite sex. The large majority of sex-role theories have been derived from theories of identification.

Freudian theory, which emphasizes the importance of the father behaving in a certain way to foster identification with the proper sex model, highlights the necessity for the father to be punitive and threatening toward his son and loving and tender toward his daughter, while discouraging her masculine strivings (Deutsch, 1944; Fenichel, 1945). Adequate fathering is assumed to be essential for the successful resolution of the Oedipal or Electra complexes (Leonard, 1966).

Whiting's status-envy theory says a young boy will learn masculine behavior only if he sees his father as the primary consumer of valued resources. This theory can be viewed as an extension of the Freudian hypothesis of identification with the aggressor in that "identification with the aggressor is the outcome of a rivalrous interaction between the child and the parent who occupies an envied status" (Bandura & Walters, 1963).
Mowrer (1950) and Sears et al. (1965) have attempted to reformulate Freudian theory in terms of learning theory concepts. They distinguish between defensive identification—identification with the aggressor which plays a role in masculine development—and developmental identification which is synonymous with Freud's analitic identification which emphasizes the child's fear of loss of parental love and nurturance (Biller & Weiss, 1970). According to Mowrer (1950) and Sears et al. (1965) the basis for analitic development is an affectional emotional link with the parent which motivates the child to reproduce "bits of the beloved parent" and the child then becomes strongly dependent upon the parents for their nurturance; the child learns to perform those acts which are rewarded by his parents and ceases doing those actions which earn him no reward. The major hypothesis of this learning theory is that proper sex-role development is positively related to the degree of warmth and affection the father shows his son and toward his own wife as an influence upon his daughter's development. The more love and respect children have for their father, the more reinforcing the father's approval will be for them. Nash (1965) suggests child identification with a parent can best be understood in terms of learning theory: warm, affectionate relationships, and prolonged associations are among the mor vital requirements to successful identification.

Compared to other theories of identification, Parsons' (1955) Role Theory puts more emphasis upon the role of the father
in the family. It too is an attempt to merge Freudian and learning theory hypotheses. According to Parsons, children will identify with the person who is most powerful in interacting with them and is most able to dispense both rewards and punishments. Bronfenbrenner (1960) has pointed out that the one novel contribution of this theory is that the child identifies not with the parent as a total person, but with the reciprocal role relationship that is functioning for the child at a particular time. These reciprocal roles differ by sex for both parents and children. Thus, in order for a preschool boy to identify with his father and develop a proper sex-role, his father must be the most powerful in interacting with him. According to Parsons, parents differ in roles, with the father being instrumental and the mother expressive. The boy identifies with the instrumental role of the father, and in this way the boy becomes masculine. Or put in another way, fathers carry out differential reinforcements into reciprocal role relationships with his children as part of his instrumentalness. These differential reinforcements are then responsible for the establishment of sex-role learning in the developing child. Parsons thus names the father as the primary transmitter of culturally determined conceptions of masculinity and femininity.

Johnson (1963) further interprets Parsons' theory of identification as it relates to a number of empirical studies. The correspondence between the masculine and feminine personality traits and the two parental roles indicates that the mother's attitude to both male and female children is expressive. On the
other hand, the father's attitude is instrumental toward the male child and expressive toward the female child.

Sex-role differentiation then follows the initial mother identification and results from the identification of both sexes with the father in differentiated role relationships. The father adds the specifically feminine element to female's initial expressiveness by rewarding her, by his appreciative attitude, not simply for being "good" but for being "attractive". With his son as with his daughter the father is solidary, but with his son he is also demanding, thus giving the extra push that instrumentalness requires...the internalization of appropriate sex role orientations in both sexes depends upon identification with the father (Johnson, 1963: 325).

Social-power theorists take a position very similar to role theory. Bandura & Walters (1963) and Mussen & Distler (1959) stress that the model who is most likely to be imitated is the one who generally controls valued resources.

Greenstein (1966) summarizes commonalities to all identification theories: the assumptions that both sexes in children originally identify with the mother, then through a modeling process, certain specified role characteristics of the father such as his relative power or dominance or nurturance facilitate or inhibit a shift in the identification to the father; the resulting father identification promotes appropriate sex-typing, especially among males but also for females. Paternal characteristics play important parts. "The relatively greater salience of parental warmth in feminine sex-typing and paternal dominance in masculine sex-typing is apparent" (Hetherington, 1967:209).
Bronfenbrenner (1958) points out that many studies of sex-role identification "have left it unclear whether the identification refers to the learning process, the real or perceived similarity to a parent, or to an end product such as masculinity or heterosexuality." Considerable data has been collected which suggests that one or another end product of sex-typing is related to certain model characteristics such as father power, nurturance, or some other combination of these consistent with major identification theory models. Fenichel (1945) emphasized a corollary assumption. Where the father is absent, the male child is assumed to remain mother-identified and may be likely to develop feminine sex-social characteristics and latent, or even overt, homosexual tendencies. How then can a boy raised in a father absent home still exhibit male sex-typing behavior? Lynn (1964) jumps to the rescue.

Despite the shortage of male models, a somewhat stereotype and conventional masculine role is spelled out for the boy often by teachers and mothers in the absence of a father or other male models. Through a system of reinforcement for the culturally defined typical masculine-role behavior and punishment for feminine behavior, the boy's early learned identification with his mother weakens, and he comes to adopt a culturally defined masculine role... (Lynn, 1964:466).

Cooley (1959) proposed a differential expectation theory, which does not require identification as a mediation process. According to this theory, the acquisition of appropriate sex-typing is contingent upon what the child learns of the expectations which the significant others and adults in his life have for him. Its obvious advantage over derivative of Freudian identification theory in not requiring different determinants of the acquisition
process in males and females. It also avoids the thorny issue for all identification theories as to how father-absent boys can model masculine behavior.

Kohlberg (1954) has proposed a form of cognitive-labeling theory. Gradually in the interactions with his parents and siblings, a child comes to accept a label for himself or herself as being either male or female. The child then makes efforts to maintain a cognitive consistency by behaving in ways which are culturally defined as being sex-appropriate.

Hill (1960) proposed a form of "reinforcement theory" which established a system of differential reinforcement by which a child identifies sex-appropriate behavior and repeats it while avoiding atypical sex-typed behavior.

Summary of theories

Several attempts have been made to explain the process by which a child learns to behave as a male or female. All of the eight theories previously discussed have focused on the role of the parents as interpreters and enforcers of cultural stereotypic ideals. Theories may be analyzed as to their origin in terms of identification theory or non-identification theory.

Identification theories assume that children of both sexes originally identify with the mother, then through a modeling process, certain specified role characteristics of the father such as his relative power or dominance facilitate or inhibit a shift in the identification to the father; this resulting father identification promotes appropriate sex-typing,
especially among males but also among females. Five major theories were identified as belonging to this school:

1. Freudian theory as applied by Fenichel (1945) and Deutsch (1944) emphasized the importance of the father behaving in a certain way to foster identification with the appropriate sex model.

2. Status-envy theory as proposed by Whiting (1960) emphasized a rivalry arising between the child and parent who occupies an envied status. The child comes to share this "envied status" through identification with that parent.

3. Social power theorists including Bandura and Walters (1963) stressed the child's imitation of the parent who controls valued resources.

4. Learning theorists such as Mowrer (1950) reformulated Freudian theory into a focus onto the degree of affection children hold for their father and perceive their father giving to them. The child learns to do those behaviors which earn their father's approval.

5. Role theory as proposed by Parsons (1955) and Johnson (1963) when compared with other theories of identification, gave more emphasis upon the role of the father in the family. It too attempted to merge Freudism theory with learning theory but saw fathers carrying out differential reinforcements into reciprocal role relationships with his children as a function of the father's instrumental role. The child identifies not with his father but with this reciprocal role relationship. These differential reinforcements are then responsible for sex-role learning by the child.
Non-identification theories do not require identification with a parent as a mediation process to the learning of sex-typed behavior. Three major theories were discussed as belonging to this school:

1. Differential-expectation theory proposed by Cooley (1959) set the acquisition of appropriate sex-typing as being contingent upon the child learning of the expectations which significant adults have for him and then being rewarded for fulfilling them.

2. Cognitive-labeling theory proposed by Kohlberg (1954) emphasized a gradual process of the child labeling himself as being male or female and then seeking out and incorporating behaviors which are culturally defined as appropriate for that label.

3. Reinforcement theory as proposed by Hill (1960) established a system of differential reinforcements by which a child came to identify and repeat sex-appropriate behavior.

The development of sex roles

The two styles of sexual behavior (male and female) could be thought of as two cultural roles (masculine and feminine) and in addition to the obvious anatomical and physiological differences, the two sexes also seem to differ systematically in their behaviors and ways of thinking. It now appears that these systematic differences begin to appear very early in the child's life, beginning at about four months when girls tend to freeze in
strange situations and boy babies tend to be exploratory (Lynn, 1976). While yet under one year of age, female infants are more likely than males to cry and show distress when presented with unusual visual patterns or auditory sounds (Kagan, 1972). Preschool children differ again by sex in their use of space and equipment; boys tend to cover more space and use more equipment (Austin, 1974). Young girls often play house; young boys engage in fantasy activities outside the house. Boys' games usually have more rules than do girls' games, are more elaborate, and are more consistently structured (Piaget, 1965). Boys are more aggressive, restless, and active; girls are more interested in people, concerned with what others think of them, docile, and dependent, and they are more influenced by the opinions of others (Mischel, 1970). Girls begin to talk sooner than do boys and surpass them in verbal fluency and language use (Garai & Scheinfeld, 1968). In our society, boys are generally expected to be, and are, more object oriented, more competent in physical activities, independent, more achievement oriented, and dominant while girls are more nurturant, more submissive, passive, dependent, emotional, polite, tactful, and neat (Goodenough, 1957; Kagan, 1964; Biller, 1967).

The belief that sex-typing occurs early in life is underscored by Money's (1965) and Hampson's (1965) finding that sex-role concepts appear hard to change after the child has passed his third year of life.

Lamb and Lamb (1976) have found a tendency for parents to become concerned and feel responsible for the development of
appropriate sex-role activities. This appears to be especially true of fathers who most notably withdraw from their daughters. Lamb (1976b) found that fathers are more than twice as active in interaction with their sons as with their daughters. Their wives, however, are about equally active with children of either sex. Further, fathers of male infants were more involved in overall participation than fathers of female infants (Redina & Dickersheid, 1976). Fathers also watched boys more than girls (Redina & Dickersheid, 1976). Parke and Swain (1976) found that fathers are more likely to react contingently to male infant vocalizations than vocalizations by female infants. Differential treatment by parents for sex-typed behavior appears to be successful as Fauls and Smith (1956) report that by the time children reach the ages of five or six, most boys and girls are consciously aware that their parents expect them to prefer sex-typed activities.

Bronfenbrenner (1969) found that parental behaviors are differentially distributed by social class and by sex of the child. Girls are exposed to more affection and less physical punishment but receive more "psychological" discipline leading to internalization. Perhaps this accounts for later symptoms of anxiety, timidity, dependency, and fear of rejection among girls which might mean that they may suffer from an oversocialization. Females receive more praise, affection and companionship; and later appear to be more cooperative, obedient, and better socialized than do boys. Boys are consistently exposed to more physical discipline and harsher demands for achievement.
According to Bronfenbrenner, however, these differential treatments are marked only in the lower socio-economic classes, and as the family's social position increases, patterns of parental treatment of the two sexes converge.

Stolz (1967) found that parental beliefs about the differences between the two sexes conform to the usual cultural stereotypes for that sex. Parents appear to have little realization of the variability within each sex and of the overlap between the sexes in psychological characteristics. They thus reinforce cultural sexual stereotypic behavior.

Rothbart and Maccoby (1966) conducted a laboratory observation and found an interaction effect between the sex of the parent and the sex of the child. This helps to explain Sears, Whiting, Nowlis, and Sears finding in 1953 that parents appear less gratifying with a like-sex child. Droppleman and Shaefer (1963) and Kagan (1956) found children perceived like-sex parents as making more demands, enforcing more controls, and enacting more physical punishment as compared to the opposite-sex parent.

Researchers and theorists have both identified the father as the parent most likely to behave differently with their children on the basis of their sex (Parsons, 1955; Bronfenbrenner, 1961; Johnson, 1963; Rothbart & Maccoby, 1966; Goode, 1971; Biller & Meredith, 1974; Nye, 1974; Margolin & Patterson, 1975; Lynn, 1976).

In two studies (Goodenough, 1957; Sears et al., 1957) mothers appeared to be generally not concerned about different
sex-roles for boys and girls in the early years of childhood. Fathers, however, appeared more concerned and sometimes treated their sons and daughters very differently. Bronfenbrenner (1961) in a study of child-rearing practices of parents and their tenth grade students found that fathers more often treated each child differently, giving more affection, attention, and praise to girls than to boys, while subjecting their sons to greater pressure and harsher discipline.

Margolin and Patterson (1975) found contrary findings while studying parents interacting with their two children who were in the ages five to twelve. Fathers showed almost twice as many positive responses to their sons as to their daughters, whereas mothers gave about the same amount of positive responses to both boys and girls. This finding also produced a significant interaction effect between the sex of the parent and the child's sex. No significant difference occurred in the amount of negative consequences given to boys or girls by either parent although mothers tended to show more positive responses overall than did fathers. Goode (1957) reports that fathers are more apt to use physical punishment on boys than on girls and are less critical of their daughters.

Mussen and Rutherford (1963) in a study of the actual efforts by parents to enhance sex-role behavior in their first-grade children, found that the father was the most effective parent in enhancing sex-role characteristics in girls but not in boys. Fathers who appear to be attentive and protective are especially effective in enhancing their daughter's femininity
(Biller & Meredith, 1974; Lynn, 1976). It also appears that the mother is actually little involved in the child's efforts to achieve a sex identity (Lamb & Lamb, 1976).

Most of the available evidence seems to suggest that both parents are more anxious to press their sons toward masculinity than to press their daughters toward femininity (Biller & Meredith, 1974; Lynn, 1976). However, according to Lynn (1964) this pressure is usually of the negative type:

Desired sex-role behavior for boys is seldom defined as something the child should do, but rather negatively as something he should not do or be. A negative directive is at work within boys forcing an awareness of opposite sex activities in order to avoid them. Findings suggest that the masculine sex-role is behavior often defined negatively for boys as doing things which are not girl-like and that the male sex-role itself is defined as being un-girl-like (Lynn, 1964:28).

Lansky (1967) asked parents of kindergarten children their probable reaction should their children make a preference for an inappropriate cross-sex activity. Parents of boys expressed more negative reactions when boys made feminine choices than when girls made masculine choices; fathers were especially opposed to the thought of a boy making feminine choices. Papanek (1969) found in a study of 486 adolescents and 201 parents of adolescents that:

Parents and adolescents agree that girls are more closely controlled than are boys; each sex feels they are treated less democratically and see their parents as being less open to express affection with them than are their opposite sex sibling; girls give less emphasis to sex-role differences between the two sexes and appear less happy and satisfied with their sex roles than do boys (Papanek, 1969:95).

Goodenough (1957) interviewed parents of children two to four years of age and found that fathers were not only opposed to
masculine behavior in girls. Mothers seemed to be more accepting of their children as children rather than attempting to characterize them as boys or girls. She concludes:

It almost seems as if sex-typing goes on in boys independent of maternal influence, and goes on in girls with very little effort from the mother to exclude masculine influence (Goodenough, 1957:312).

Lynn (1976) agrees by saying:

Boys became masculine without the mother's help and girls became feminine with little effort on the mother to exclude opposite-sex influence. (p.404)

It appears the father's role is primary in sex-typing for both sons and daughters but utilizes different qualities for each sex. Mussen and Rutherford (1963) found that the relationship between father's nurturance and sex-role development was more direct in sons than in daughters. Lamb (1976) however reports that "no positive relationship has clearly been established between a son's masculinity and his father's."

Heilbrun (1968) concludes that if parents provide appropriate sex-typed models, girls will tend to identify with masculine fathers and as a result be in better psychological health than those who tended to identify with feminine mothers. Heilbrun's conclusion runs contrary to Parsons' theory in that considerable evidence was found to support the conclusion that the father is more capable of responding in both an instrumental and expressive fashion than is the mother. Thus, a daughter who identifies with a masculine father is also likely to adopt the dual capacities of behaving in both a feminine expressive manner and a masculine
instrumental fashion. This dual capacity facilitates the adjustment of girls into the real world.

This does however assume that parents present a consistent appropriate sex-typed model. Rothbart and Maccoby (1966) found this assumption not to be true. Rather than parents consistently reinforcing sex-typed behaviors, inconsistency seems to be the rule. While parents may treat his child in a manner totally consistent with his cultural stereotype in one area, he may not in another.

Summary of sex-role development

In addition to the obvious physiological differences between the two sexes, children seem to differ in regard to their cultural manner of behaving along the same gender lines. A large variety of systematic differences have been identified to begin very early in the child's life, possibly by four months of age (Lynn, 1976), and are very resistant to efforts to change them after the child's third year (Hampson, 1965; Money, 1965).

Several researchers have found that parental behavior is differently distributed by social class and the sex of the child (Sears et al., 1953; Kagan, 1956; Bronfenbrenner, 1961; Droppleman & Shaefer, 1963; Rothbart & Maccoby, 1966; Baumrind, 1971). Generally, parents appear to be less gratifying with a child of their same sex while overall, boys are subject to greater demands for achievement, more physical punishment, and receive less praise and affection than do girls but these differences disappear as the family's social position increases.
Not surprisingly, researchers have also found that both parents seem more anxious to press their sons toward masculinity than to press their daughters toward feminity (Lynn, 1964; Lansky, 1967; Papanek, 1969; Biller & Meredith, 1974; Lynn, 1976). Stolz (1967) found that parental beliefs about the differences between the two sexes conform to the usual cultural stereotypes for that sex, thus reinforcing sexual stereotypic behavior.

Researchers and theorists have both identified the father as the parent most likely to behave differently with their children on the basis of their sex (Parsons, 1955; Bronfenbrenner, 1961; Johnson, 1963; Rothbart & Maccoby, 1966; Goode, 1971; Nye, 1974; Biller & Meredith, 1974; Margolin & Patterson, 1975; Lynn, 1976). Mothers, however, appear to be generally unconcerned about different sex-roles for boys and girls in the early years of childhood and are actually little involved in the child's efforts to achieve a sex identity (Goodenough, 1957; Sears et al., 1957; Lamb & Lamb, 1976; Lynn, 1976). It thus appears that the father's role is essential in sex-typing for both sexes. A system of differential expectations and reinforcements as well as different paternal qualities begin and sustain a proper sex-identification and the adoption of sex-appropriate behavior.

Finally, it must be remembered that parents do not always respond to their children in a consistent manner. Differences in setting, social class, and familial eccentricities allow treatment to fluctuate in terms of parental reinforcement of cultural sexual stereotypes.
Review of the Birth Order Research Literature

A substantial body of research has been generated on hypothesized effects of birth ordinal position since Adler (1932) first discussed it in that same year. A variety of dependent variables such as subsequent behavior patterns, personality, intelligence, or miscellaneous attributes have been tested for effects from ordinal position. Although this literature has been severely criticized as being "inconclusive, contradictory, and almost always deficient in theoretical orientation, methodological technique, or both" (Kunz & Peterson, 1977:114), the large majority of its studies conclude it to be a very important psychological variable affecting a person throughout his lifetime (Hamid, 1970; Platt et al., 1970; Berry & Hansen, 1976). Hamid (1970:807) continues stating the cause for differences between a family's children result primarily from the "differential social learning experiences created by differences in family interaction patterns." Platt et al. (1970:70) put it in much the same way:

A child's birth order and sex can have important effects upon his entire life. Parents and others often react differently, based on whether the child is the first born or later born member of the family, and whether he is male or female.

The research has attempted to identify a variety of differences between birth ordinal positions. This too has met with some contradictory findings such as the trend reported by Altus (1966) and Schacter (1963) that first-borns gain greater recognition in school and in later life; but, this has been disputed by Bayer (1966). This confusion resulting from contradictory findings has led researchers and theorists in this area to drop birth ordinal
position per se as a research variable preferring to call it instead "psychological position" and admit to position effects only within competitive families (Allred, 1977:24). Researchers have focused on what kinds of parental expectations and pressures for success parents exert upon their child occupying one position as compared to another child occupying a different position.

Some studies have continued to attempt a measurement of "inherent" differences between the ordinal positions. Sampson (1965) and Bayley (1965) reported a slight favor in IQ for first-born children over later-born children, although these differences are small and seem to have no cumulative effect or relation to later intelligence test scores. Three studies (Schachter, 1959; Capra & Dittes, 1962; Dember, 1964) found first-born children to have a greater affiliative behavior as a means of reducing anxiety. However, Glass et al. (1963) found later-born children react with greater annoyance to a frustrating agent than do first-borns. Eisenman (1967) found a high birth ordinal difference between first-born infants, who preferred greater visual complexity, and non-first-born infants, who preferred less visual complexity.

Many studies report that parental behavior changes according to the child's ordinal position. Sears et al. (1957) and Goode (1971) report the eldest child receives more discipline and less open expression of affection than non-first-born children. Schachter (1959) reported that first-born children receive more attention from parents, are more likely to be exposed to "psychological" discipline, are more anxious, and dependent;
whereas, later-born children are more aggressive and self-confident. Therefore, greater parental pressures are directed toward the first-born's achievement and acceptance of responsibility (Rosen, 1961). Parents seem to talk and interact more with the first-born, especially if they are male (Bossard, 1945; Parke & O'Leary, 1976; Parke & Sawain, 1976), and pay more attention to the first-born children (Koch, 1954). Iasko (1954) studied 40 two-child families and found the following parental behavior changes in regard to the child's ordinal position:

1. Parental behavior toward the first-born as contrasted with the second-born is, on the average, less warm emotionally, more restrictive and more coercive. These differences are more apparent in the preschool years than later. Similar differences appear between treatment of second-born and third-born children.

2. Parents systematically change in their treatment of the first-born child toward reduced parent-child interaction. No such difference occurred toward the second-born.

3. Parents tend to be consistent in the methods of handling first-born and second-born children, and in their policies of child-rearing. However, the nature of the emotional relationship between the parent and child is less predictable from one sibling to another (Iasko, 1954: 133-134).

In Hamid's (1970) study of ordinal effects, 150 first-born and later-born children were studied as to their spatial placements from their mother, father, and younger siblings. First-borns placed themselves significantly further away from later-born siblings and significantly further away from their mothers, while placing themselves significantly closer to their fathers than did second or later-born children. No control was made of the child's sex however.

Differential treatment by parents appears to occur in both parents very early in the child's life. Parke and O'Leary
(1976) found that this was especially true for fathers in that they touched first-born male newborns more than either later-born boys or girls of any ordinal position. Parke and Sawain (1976) found that fathers vocalized more to first-born infants regardless of their sex that to infants in any other ordinal position. R.R. Sears (1950) found that mothers treated second and later-born infants more permissively in scheduling of feeding and weaning than they treated first-born or only children. Mothers also provided less affectionate caretaking and helping activities at bedtime for second or later-borns and were slightly less cautious or worrisome about sickness or danger.

Platt et al. (1969) found a significant interaction between sex and birth order as it affected an understanding of the passage of time among 132 undergraduate college students. Later-born females saw the passage of time in a more active way than did all other groups. Rothbart (1971) also found a similar interaction effect.

Rosen (1961) proposed that since parents have no frame of reference for the achievement expectation for their first-born children, they tend to overestimate their ability more often than for their second-born children and thus, set higher standards for the first-borns' performances.

Rosenberg and Sutton-Smith (1964) conducted an extensive study of the effects of ordinal position upon sex-role and anxiety among 900 preadolescents. Among their conclusions were:
1. Children in one, two, or three child families are differentially affected by the reinforcements in sex-role learning afforded by parents and other siblings.

2. Effects of ordinal position upon sex-role identification vary with family size.

3. For two-child families, a system of complimentary imbalance prevails.

4. The presence of opposite-sex sibling tends to decrease the self-sex preferences and anxiety in two-child families; presence of a like-sex sibling tends to reinforce the self-sex preferences and increase anxiety in two-child families.

5. Overall, the most favorable position in two-child families seems to be that of the second-born child having an older sibling of the same sex. The most favorable position among three-child families is that of firstborn girl and nonfirstborn boys (Rosenberg & Sutton-Smith, 1964:325).

Belmont and Marolla (1973) related birth order and family size while controlling for social class as it affected intellectual performance. They concluded from their very large sample of 395,000 Dutch men that "effects of birth order were consistent across social class" (Belmont & Marolla, 1973:1101). Zajoc (1975) concluded from the same data that as birth order increased, intelligence decreased. Kuna and Peterson (1977) while controlling for the family's social class found that neither family size or birth order were relevant predictors of GPA among 6642 adolescents.

**Summary of birth order research**

Having generated a large body of research, birth order as it affects various dependent variables remains unproven and has been recently criticized as lacking in theoretical orientation or methodological technique (Kunz & Peterson, 1977). Theorists in this area have proposed a variety of differences to exist between ordinal positions and cite these differences as occurring because of "differential social learning experiences created by differences
in family interaction patterns" (Hamid, 1970:807). Both parents behave differently toward a child depending upon his sex and ordinal position (Platt et al., 1970; Goode, 1971; Rosen, 1961; Sears et al., 1957). This is especially exemplified by the father; such differential treatment from both parents appears early in the child's life.

Parents are said to touch first-born males more (Parke & O'Leary, 1976), vocalize more to first-born infants (Parke & Sawain, 1976), hold higher expectations of first-borns and pressure them toward achievement and acceptance of responsibility (Rosen, 1961).

**Theoretical Foundations**

This thesis will attempt to apply Cooley's (1959) differential-expectation theory and Hill's (1960) differential reinforcement theory to an empirical study of paternal expectation for and involvement in the performance of his five-year-old child in a variety of tasks. These two theories may be summarized in four propositions:

1. Fathers hold a set of expectations for their children in terms of their behavior which vary with the child's sex and ordinal position.

2. Fathers reward their children as they fulfill paternal expectations of them and as their children exhibit cultural sex-typed behavior.

3. Both paternal expectations and reinforcements follow culturally defined patterns of sex-appropriate behavior.
4. Children come to identify and internalize sex-appropriate behavior as they learn their father's expectations for them and which behaviors will earn paternal rewards.

**Definitions of Concepts**

Because there is some vagueness accompanying concepts used in the social sciences, it is important to define some of the concepts used in this study:

**Paternal criticism**

This is any verbal statement initiated by the father directed toward his child which is derogatory or corrective in nature.

**Paternal praise**

Defined as any verbal statement by the father which is directed toward his child with the intent of encouraging or motivating the child to a high level of performance.

**Paternal expectation**

Defined as the father's estimate of his child's performance. These were given in response to a direct question.

**Paternal supportiveness**

Comprised of three subdivisions: (1) physical proximity—physical movement by the father toward his child, (2) physical contact—any intentional nondisciplinary physical touch made by the father, and (3) supportive behavior—paternal behavior such as eye contact, winks, smiles, nods, or grins directed toward the child intended as encouragement.
Paternal involvement

These also are comprised of three areas or types of promptings the father directed toward his child. These included: (1) informative cues—verbal statements by the father directed toward his child which give the child new information or instruction, (2) paternal questioning—verbal statements by the father directed toward his child asking the child to think, remember, or synthesize prior information, and (3) extent of intrusiveness—an overall rating of the father's efforts to offer advice and physically assist the child in completion of the tasks.

Time spent in tasks

The total number of seconds father and son spend in the four tasks.

Readiness of explanation

The father's readiness to satisfy the curiosity of his child during his explanations to the child.

Questions by the child

Verbal statements made by the child directed toward his father during a task as an attempt to gain new information or clarification.

Hypotheses for this Study

After a careful review of the literature, the following relationships have been hypothesized concerning the manner in which fathers interact with their natural five-year-old children.
In each case, only one of the alternative hypotheses will be stated; it will be assumed that the null hypothesis would propose no significant difference or relationship between the variables.

Birth order hypotheses

**H-B1.** Fathers will hold higher expectations for their firstborn children than for their nonfirstborn children.

**H-B2.** Whenever the father is called upon to instruct his child, he will show a greater readiness of explanation, satisfaction of curiosity, to his nonfirstborn child than for his firstborn child.

**H-B3.** Fathers will show more involvement in the performance of their firstborn than in the performance of their nonfirstborn children.

**H-B4.** Fathers will ask more questions of their firstborn children than of their nonfirstborn children.

**H-B5.** Fathers will give more informative verbal cues to their firstborn children than to their nonfirstborn children.

**H-B6.** Fathers will be more likely to praise the performance of their nonfirstborn children than the performance of their firstborn children.

**H-B7.** Fathers will be more likely to criticize the performance of their firstborn children than the performance of their nonfirstborn children.
H-B8. Fathers will exhibit more supportive behavior toward their nonfirstborn children than toward their firstborn children.

H-B9. Fathers will spend more time with their nonfirst-born children in completing the tasks than with their firstborn children.

H-B10. Firstborn children will ask more questions of their father than will nonfirstborn children.

Sex of child hypotheses

H-S1. Fathers will hold higher expectations for their male children than for their female children.

H-S2. Whenever the father is called upon to instruct his child, he will show a greater readiness of explanation (satisfaction of curiosity) for female children than for male children.

H-S3. Fathers will show more involvement in the performance of their male children than in the performance of their female children.

H-S4. Fathers will ask more questions of male children than of female children.

H-S5. Fathers will give more informative verbal cues to male children than to female children.

H-S6. Fathers will more often praise the performance of female children than that of male children.
H-87. Fathers will more often criticize the performance of male children than the performance of female children.

H-88. Fathers will show more supportive behaviors toward female children than toward male children.

H-89. Fathers will spend more time with female children in completing the tasks than with male children.

H-90. Male children will ask more questions of their father than will female children.

Sex and birth order interaction hypothesis (exploratory)

H-E1. A significant interaction effect exists between the child's sex and birth ordinal position.
CHAPTER 2

METHODOLOGY

Methods of collection and analysis of data will be explained in three stages: first, a description of how the two independent variables and eight dependent variables will be operationalized; second, the nature of the sampling universe, sampling methods, and technique of data collection; third, the major techniques of data analysis will be outlined.

Operationalization of Variables

Independent variables

Self report by the fathers was the data source for the two independent variables which are: (1) the child's sex, and (2) his or her birth ordinal position within the family. Birth ordinal position was defined as the order in which the child was born into the family. For our research purposes, it was collapsed to include either firstborn or nonfirstborn child. The sex of the sample child was also noted.

The effects of the independent variables upon the dependent variables were assessed separately except when used in a two-way, three-way, or step-wise regression to assess the interaction between and their combined effects.
Dependent variables

Each of the eight dependent variables were independently scored by two raters during the live observation. All but one variable (paternal involvement) was measured at least twice by each rater.

The following variables were merely counted as they occurred in each task and then totalled for each pair: (1) paternal criticism, (2) paternal praise, (3) paternal supportiveness-contact and supportiveness were counted independently and totalled for each area--, (4) paternal involvement-informative and questioning verbal cues--, and (5) questions by the child.

Readiness to offer an explanation—satisfy the child’s curiosity—was rated according to Fels' Parent Behavior Scale. Raters were asked to consider the number, depth, time, and the father’s efforts to fully answer the child’s questions or give new information to the child. Scores ranged from zero to five with five being the highest possible score.

Time spent in tasks was recorded by a stopwatch for each task and then totalled for each father and child.

Paternal expectation was given in response to a direct question asked by the interviewer during the initial reception period prior to the observations.

The extent of paternal intrusiveness was given as an overall rating on a scale ranging from one to five with five being the highest possible score.
Physical proximity was also rated by each rater on a scale from one to five with five being the highest possible score.

**Sampling Procedure**

The subjects were five-year-old kindergarten students enrolled in Provo, Utah School District and their natural fathers; no adoptive fathers were included in the sample. All were Caucasian, citizens of the United States, and members of The Church of Jesus Christ of Latter-day Saints (Mormons). Provo is approximately eighty percent LDS and with the Mormon Church's strong emphasis upon the family and patriarchal outlook, it was felt the limitation upon the sample would not decrease the significance of the study.

Names were gathered from the complete Provo, Utah School District census which listed children by the surname. On the computer printout, it included: (1) name, (2) sex, (3) school, (4) grade in school, (5) parents' names, (6) address, and (7) telephone number. This allowed for families having a child enrolled in kindergarten to be identified. It also identified those families having stepfather or homes in which no father was present, which were disqualified from the sample.

Four subpopulations were identified. One list was made of those families which appeared to have only one child enrolled in school and that child being in kindergarten as a list of firstborn children. Another list was made of families having two children in school, the youngest of which was enrolled in
kindergarten. These lists were then divided by sex of the kindergarten child. A total of 470 names were thus compiled.

To insure an equal representation from each school and geographic region (and hence, social class), each name received one number. A separate number list was then made, separated, and mixed into a container. A number was then drawn, written down, replaced, mixed, and then another number was drawn and the process was repeated always replacing the drawn number until thirty names had been drawn for each of the four categories.

Because all the sample families identified by this method had telephones, fathers were contacted by phone as to their willingness to participate in the study. Of those 120 names identified from the sample: thirty had moved from the area; forty-three were no longer eligible because their child was now six, or parents had recently divorced, or a move was pending; and twenty-three refused to participate (observations were conducted during the Christmas holidays). This left a total sample of thirty-nine (32.5% of the sample universe of 120 or 63% of those eligible for the study).

Of this sample, twenty children were firstborn children and nineteen were nonfirstborn; twenty-one were male, and eighteen were female, see table 1 for composition of sample. The fathers’ ages ranged from twenty-three to fifty-three with a mean age of thirty-three point seven. The mean educational level of the fathers was fifteen point eight years. Twenty-one fathers were employed in white collar occupations and eighteen were blue collar
workers. The number of children in the home ranged from two to seven with a mean of three point seven. No significant difference was found among the four groups as to their family size, father's education, age, or occupation.

<table>
<thead>
<tr>
<th>Firstborn</th>
<th>Nonfirstborn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>12</td>
</tr>
<tr>
<td>Female</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
</tr>
</tbody>
</table>

Research Procedure

All observations were held in a Child Development observation room on the Brigham Young University campus. Two adjacent rooms were used, one large room equipped with tables and chairs where the family was welcomed by a receptionist and all preliminary census information was gathered. The author would then accompany the father and child into a smaller room which was equipped with one table, three movable chairs, a microphone, and a one-way mirror. The author gave instructions to each pair, father and child, and scored the observations while another rater sat outside the room and observed the pair through the one-way mirror. All of the tasks were timed.
Tasks

Cartoon. The father was first asked to show his child two four-framed "Peanuts" cartoon strips. Fathers were allowed to read what the characters were saying, describe the action, or make any interpretations they thought necessary. This task allowed a measure of the father's readiness to offer an explanation, or satisfy the curiosity of the child, as measured by Fels' Parental Behavior Scale.

Pictures. The father was then handed twenty pictures of zoo animals. They were instructed to tell the child anything about the picture or about the animal they thought would help their child remember the name of the animal. After the two had been through the pictures, they were laid aside. The child was then asked to name as many animals as he could remember while the father gave him clues or prompted him as much as he desired. This task afforded a measure of the pressure the father would place on the child to perform well by counting the number of the father's promptings. A record of physical supportiveness and parental expectations were then made.

Explanation. Fathers were next given a simple cut-away drawing of a water faucet. The father was asked to show the diagram to his child and explain to him just how the faucet worked using his own words. This task allowed a measure of the father's readiness to offer an explanation as measured on Fel's Parent Scale. A record was kept of verbal cues and supportiveness.
Puzzle. The last task involved a seven-piece puzzle from WISC-R Intelligence Test for Children. Fathers were allowed to help the child as much as they desired. Records were kept as to the father's verbal promptings and physical supportiveness. An overall rating was given as to the father's overall intrusiveness by the two raters. Fathers prior to the puzzle had been asked to estimate how quickly and easily their child would complete the puzzle on a scale from one to four; this provided a measure of the father's expectation level for their child's performance. (See table 2 for task summary)

Coding Procedures and Reliabilities

All scoring for data analysis was done live, while the four tasks were completed by the father and child. The author and another rater both participated in scoring. A total of four raters were used, including the author, from which one was randomly assigned to score each interaction. The length of each task was measured by a stopwatch; while the father's and child's performance and style were rated. The average inter-rater consistency was .7495 with three category consistency ratings falling below this figure.

The basic statistical analysis for all variables was a two-way analysis of variance (sex x birth order). Correlations, t-tests (one-tailed), step-wise regression, and multiple regressions were also performed upon the totals. A .05 significance level was required for a result to be significant. In all analyses the SPSS computer program was used.
A summary table of stepwise multiple regression analysis and predictive regression equations were also produced. Using the stepwise technique, the independent variable chosen first in the development of the multiple correlation equation is the variable which predicts the most change in the dependent variable. Each successive independent variable is chosen in the same way, adding to the amount of explained variance according to the power of its relation to the dependent variable while controlling for the effect of the other independent variables preceding it in the equation. The predictive equation will utilize standardized beta coefficients so as to allow a numerical estimation of each independent variable's effect upon the dependent variable. Standardized betas allow us to compare variables of a different level of measurement together.
TABLE 2
RESEARCH DESIGN

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Meaning of Hypotheses</th>
<th>Cartoon</th>
<th>Pictures</th>
<th>Explanation</th>
<th>Puzzle</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-B1--H-S1</td>
<td>Explanation</td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>H-B2--H-S2</td>
<td>Readiness to offer an explanation</td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>H-B3--H-S3</td>
<td>Paternal involvement</td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>H-B4--H-S4</td>
<td>Questions by father</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>H-B5--H-S5</td>
<td>Informative cues</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>H-B6--H-S6</td>
<td>Praise</td>
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<td>x</td>
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<td>x</td>
</tr>
<tr>
<td>H-B7--H-S7</td>
<td>Criticism</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>H-B8--H-S8</td>
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<tr>
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<td>x</td>
<td>x</td>
<td>x</td>
</tr>
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<td>Questions by child</td>
<td>x</td>
<td>x</td>
<td></td>
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</tbody>
</table>

Note: X stands for presence of hypothesis during various tasks. The tasks include, fathers reading two four-framed cartoon strips; showing 20 pictures of zoo animals; explaining workings of a water faucet; and helping put a puzzle together.
CHAPTER 3

RESULTS

ANOVA results are summarized in tables 3-6. For all measures, the meaning of a score corresponds to the name of the variable. They are labelled as being the group's mean or standard deviation. An asterisk (*) indicates the variable has a significant difference between the groups at the .05 level of significance concerning each group as independent samples upon which t-tests could be performed. The results of the ANOVA procedures will be discussed under subject headings.

For data analysis, it was first necessary to determine whether performance of males/females or firstborn/nonfirstborn children differed significantly on the tasks assigned to them. If actual differences in the success or failure of the two groups are found, these differences might have in turn affected the fathers' behavior complicating any interpretation of differences among paternal behaviors. Measures of the children's performances, including the number zoo animals recalled and the time required to complete the puzzle, failed to correlate with each other although the direction of differences were similar (boys recalled more animals and spent less time in completing the puzzle; nonfirstborn children did better in the recall and
<table>
<thead>
<tr>
<th>Variable</th>
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<tr>
<td></td>
<td>Male</td>
<td>Female</td>
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<td>Nonfirstborn</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Dv.</td>
<td>Mean</td>
<td>Std. Dv.</td>
</tr>
<tr>
<td>Expectation</td>
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<td></td>
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<td></td>
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<tr>
<td>Puzzle</td>
<td>2.90</td>
<td>0.19</td>
<td>2.67</td>
<td>0.91*</td>
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<td>2.36</td>
<td>12.05</td>
<td>6.42*</td>
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<td></td>
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<tr>
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<td>0.91</td>
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<tr>
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<td>49.92</td>
<td>100.00</td>
<td>72.66*</td>
</tr>
<tr>
<td>Explan. compxty</td>
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<td>0.79</td>
<td>3.25</td>
<td>1.25*</td>
</tr>
<tr>
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<td>119.48</td>
<td>172.83</td>
<td>60.94*</td>
</tr>
<tr>
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<td>0.52</td>
<td>3.00</td>
<td>3.97</td>
</tr>
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<td>Pressure</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Total questions</td>
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<td>15.95</td>
<td>35.44</td>
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</tr>
<tr>
<td>Total informative</td>
<td>64.10</td>
<td>21.62</td>
<td>61.72</td>
<td>12.71</td>
</tr>
<tr>
<td>Total praise</td>
<td>10.86</td>
<td>8.72</td>
<td>15.78</td>
<td>3.57</td>
</tr>
<tr>
<td>Total criticism</td>
<td>1.10</td>
<td>2.26</td>
<td>0.44</td>
<td>0.98*</td>
</tr>
<tr>
<td>Supportiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Contact</td>
<td>0.81</td>
<td>1.81</td>
<td>2.39</td>
<td>6.27*</td>
</tr>
<tr>
<td>Physical proxty</td>
<td>8.43</td>
<td>2.62</td>
<td>7.44</td>
<td>2.67</td>
</tr>
<tr>
<td>Supportive behvr.</td>
<td>38.81</td>
<td>223.42</td>
<td>42.67</td>
<td>16.87*</td>
</tr>
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<td>Total task time</td>
<td>779.71</td>
<td>243.25</td>
<td>791.99</td>
<td>256.14</td>
</tr>
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<td>Variable</td>
<td>Male Mean</td>
<td>Male Std. Dv.</td>
<td>Male Mean Std. Dv.</td>
<td>Female Mean</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------</td>
<td>---------------</td>
<td>-------------------</td>
<td>-------------</td>
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<tr>
<td><strong>Expectations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Puzzle</td>
<td>2.92</td>
<td>0.29</td>
<td>2.89</td>
<td>0.60*</td>
</tr>
<tr>
<td>Picture recall</td>
<td>14.60</td>
<td>2.41</td>
<td>14.02</td>
<td>2.92</td>
</tr>
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<td>Involvement</td>
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<td></td>
</tr>
<tr>
<td>Carbon complxty</td>
<td>2.83</td>
<td>1.03</td>
<td>2.83</td>
<td>0.78</td>
</tr>
<tr>
<td>Time (sec.)</td>
<td>111.50</td>
<td>45.43</td>
<td>92.67</td>
<td>56.02</td>
</tr>
<tr>
<td>Explan. complxty</td>
<td>3.83</td>
<td>0.94</td>
<td>3.98</td>
<td>0.50</td>
</tr>
<tr>
<td>Time (sec.)</td>
<td>185.75</td>
<td>83.11</td>
<td>256.24</td>
<td>152.19*</td>
</tr>
<tr>
<td>Amount involvement</td>
<td>3.00</td>
<td>0.95</td>
<td>3.11</td>
<td>0.93</td>
</tr>
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<td><strong>Pressure</strong></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Total questions</td>
<td>35.17</td>
<td>15.44</td>
<td>29.22</td>
<td>16.93</td>
</tr>
<tr>
<td>Total informative</td>
<td>62.50</td>
<td>18.40</td>
<td>66.33</td>
<td>26.32</td>
</tr>
<tr>
<td>Total praise</td>
<td>9.17</td>
<td>5.24</td>
<td>9.31</td>
<td>11.93*</td>
</tr>
<tr>
<td>Total criticism</td>
<td>1.25</td>
<td>2.80</td>
<td>0.69</td>
<td>1.19*</td>
</tr>
<tr>
<td><strong>Supportiveness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phys. contact</td>
<td>1.25</td>
<td>2.30</td>
<td>0.22</td>
<td>0.44*</td>
</tr>
<tr>
<td>Phys. proxty</td>
<td>8.08</td>
<td>3.12</td>
<td>8.89</td>
<td>1.83*</td>
</tr>
<tr>
<td>Supportive behr.</td>
<td>34.58</td>
<td>19.38</td>
<td>44.44</td>
<td>23.15</td>
</tr>
<tr>
<td>Total task time</td>
<td>766.17</td>
<td>206.55</td>
<td>797.78</td>
<td>297.69</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>Sex</td>
<td>Birthorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>--------------</td>
<td>--------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Mean</td>
<td>Std. Dev.</td>
</tr>
<tr>
<td>Picture recall</td>
<td>14.14</td>
<td>13.11</td>
<td>6.42</td>
<td>13.00</td>
</tr>
<tr>
<td>Time recall</td>
<td>294.00</td>
<td>147.83</td>
<td>509.45</td>
<td>117.83</td>
</tr>
<tr>
<td>Puzzle</td>
<td>3.05</td>
<td>3.33</td>
<td>0.84</td>
<td>3.10</td>
</tr>
<tr>
<td>Time puzzle</td>
<td>166.67</td>
<td>133.71</td>
<td>160.50</td>
<td>84.82</td>
</tr>
<tr>
<td>Total Questions</td>
<td>3.33</td>
<td>4.22</td>
<td>5.29*</td>
<td>4.20</td>
</tr>
</tbody>
</table>
### TABLE 6

**MEANS AND STANDARD DEVIATIONS FOR INTERACTING VARIABLES DESCRIBING CHILD'S BEHAVIOR**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Male Firstborn</th>
<th>Male Nonfirstborn</th>
<th>Female Firstborn</th>
<th>Female Nonfirstborn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture recall</td>
<td>13.83</td>
<td>2.48</td>
<td>14.55</td>
<td>2.83</td>
</tr>
<tr>
<td>Time recall</td>
<td>308.83</td>
<td>120.38</td>
<td>274.22</td>
<td>101.72</td>
</tr>
<tr>
<td>Puzzle</td>
<td>3.17</td>
<td>0.72</td>
<td>2.89</td>
<td>1.05</td>
</tr>
<tr>
<td>Time puzzle</td>
<td>160.05</td>
<td>76.31</td>
<td>175.44</td>
<td>61.90</td>
</tr>
<tr>
<td>Total questions</td>
<td>4.25</td>
<td>4.29</td>
<td>2.11</td>
<td>2.26*</td>
</tr>
</tbody>
</table>
puzzle performance while firstborns spent less time in completing the puzzle.) The time required to solve the puzzle showed a significant sex difference with males requiring less time than females ($F=3.73$, df=1/37, $p<.01$). This difference does not appear among the other groups or emerge as significant when birth order is controlled, except for an insignificant trend for firstborn males to require the least time, and nonfirstborn females to require the most time. Fortunately, this was the last task so the child's performance could not affect paternal responses on subsequent tasks.

**Paternal Expectation**

The first paternal variable examined was the fathers' estimate of his child's performance. It was expected that this variable would be reflected in the father's response to a direct question asked him by the researcher concerning his child's likely performance on the two tasks (picture recall and puzzle completion). Fathers were asked to estimate their child's ability on each task.

**Sex**

Hypothesis H-S1 predicts that fathers will hold higher expectations for their male children than for their female children. Fathers in our sample were asked to state their expectations concerning their child's performance. In both cases, fathers predicted their sons would perform on a significantly higher level than that of their daughters. In the puzzle estimate, fathers showed a significant tendency to have a higher expectation
of their male children's ability \((F=4.32, \text{ df}=1/37, p\.01,\) Table 3 ) and a significantly higher estimation of their sons' ability to recall the names of animals \((F=3.70, \text{ df}=1/37, p\.01,\) Table 3 ). It thus appears that H-S1 has strong support at least among our sample. Fathers do hold higher expectations for their male children than for their female children.

**Birth Order**

Contrary to the expectations of H-B1, which predicted higher expectations for firstborn children, no such significant difference appeared among our sample (see Table 3 ). An insignificant trend did emerge among our fathers for them to expect more from their nonfirstborn children, thus providing some contradictory evidence against our hypothesis. At least it does not appear that among our highly educated fathers that they expect more of one birth ordinal position than another.

**Interaction**

A moderately strong interaction effect occurred for paternal expectation of picture recall. Fathers significantly expected more from their firstborn males than from the other groups and least of all from their firstborn females \((F=4.18, \text{ df}=1/19, p\.05,\) Table 4). The same trend occurred among paternal estimations of their children's puzzle ability although this was not significant. This provides some support for H-E1 for an interaction to exist between the child's sex and birth ordinal position as it affects paternal expectations.
Regression results

A step-wise multiple regression was performed on paternal expectation of their child's performance in completing the puzzle, as seen in Table 7.

**TABLE 7**

**PATERNAL EXPECTATION**

<table>
<thead>
<tr>
<th>Variable</th>
<th>R</th>
<th>R²</th>
<th>RSQ Change</th>
<th>F-test</th>
<th>P&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paternal age</td>
<td>.9273</td>
<td>.8599</td>
<td>.8599</td>
<td>227.1324</td>
<td>.0001</td>
</tr>
<tr>
<td>Paternal education</td>
<td>.9394</td>
<td>.8832</td>
<td>.0232</td>
<td>7.1596</td>
<td>.001</td>
</tr>
<tr>
<td>Hours father spent with child each week</td>
<td>.9443</td>
<td>.8917</td>
<td>.0085</td>
<td>2.8472</td>
<td>.05</td>
</tr>
<tr>
<td>Child's ordinal position</td>
<td>.9449</td>
<td>.9023</td>
<td>.0106</td>
<td>3.6972</td>
<td>.01</td>
</tr>
<tr>
<td>Paternal occupation</td>
<td>.9532</td>
<td>.9085</td>
<td>.0062</td>
<td>2.2879</td>
<td>.05</td>
</tr>
<tr>
<td>Sex of sibling</td>
<td>.9535</td>
<td>.9091</td>
<td>.0006</td>
<td>.2210</td>
<td></td>
</tr>
<tr>
<td>Hours spent with family each week</td>
<td>.9536</td>
<td>.9094</td>
<td>.0003</td>
<td>.0926</td>
<td></td>
</tr>
<tr>
<td>Sex of child</td>
<td>.9537</td>
<td>.9096</td>
<td>.0002</td>
<td>.0636</td>
<td></td>
</tr>
<tr>
<td>Family size</td>
<td>.9538</td>
<td>.9098</td>
<td>.0002</td>
<td>.0513</td>
<td></td>
</tr>
</tbody>
</table>

**Multiple regression equation**

The multiple regression equation was done using the standarized beta coefficients. The equation is as follows:

Paternal expectation = 0.036 (child's sex) + −0.119 (child's birth ordinal position) + 0.649 (paternal age) + 0.199 (paternal education) + 0.090 (paternal occupation) + 0.017 (family size) + 0.014 (sex of sibling) + −0.164 (hours father spent with subject) + −0.018 (hours father spent with family). The intercept = 0.161; R² = 0.954; R² = 0.910; F-value = 32.486; and p < 0.001.
Variables

Our independent variables explained a total of 91 percent of the variance in the dependent variable of paternal expectation but the sex of the child actually contributed very little to the overall explained variance. Birth order did make a significant contribution although our T-test failed to reveal any significant differences between groups. The fathers' age and education contributed 88 percent to the total explained variance.

Paternal Readiness of Explanation

Fels' Parental Behavior Scale was used to measure the fathers' readiness to offer an explanation to their children. This measure was made for two tasks: (1) explaining the two cartoon strips, and (2) explaining the workings of the water tap drawing. An inter-rater consistency score for this area was .58. The explanations were also timed.

Sex

Hypothesis H-S2 predicts that fathers will show a greater readiness to offer an explanation to their female children than to their male children. According to the data on table 3, the opposite appears to be the case. In explaining the mechanics of a water faucet, fathers showed a significantly greater readiness to satisfy the curiosity of their sons than their daughters (F= 2.52, df=1/37, p<.05). This trend was also visible in explaining the cartoons, although not at a significant level. Fathers also spent a significantly greater amount of time in the two
explanations with their sons than with their daughters (for the cartoon, $F=2.12$, df=$1/37$, $p<.05$; for the water tap, $F=3.84$, df=$1/37$, $p<.01$). It thus appears that $H-S2$ must be rejected and evidence recognized that fathers significantly showed a greater readiness of explanation toward their sons than toward their daughters. Possibly the task reflected some sex bias in that fathers saw greater need for sons to understand the workings of a faucet.

**Birth order**

The above trend continued as it affected fathers in making explanations to the two birth ordinal position groups. Hypothesis $H-B2$ predicted that fathers would show greater readiness of explanation to their nonfirstborn children. The two tasks failed to reveal a significant difference between the two groups although fathers did show a greater readiness to satisfy the curiosity of their firstborn children as compared to their explanations given to their nonfirstborn children. However, fathers did spend a significantly longer amount of time in making their explanation to their nonfirstborn children than with their firstborn children (for the cartoon, $F=3.07$, df=$1/37$, $p<.01$; for the water faucet, $F=2.67$, df=$1/37$, $p<.05$; see table 3).

**Interaction**

A relatively strong consistent effect occurred between the child's sex and birth order as it affected paternal explanation. Fathers spent a significantly greater amount of time in explaining the workings of the water tap to their nonfirstborn
males and least to their firstborn females ($F=4.97$, df=1/37, $p<.05$; see table 4). A significant trend for fathers to show a greater readiness of explanation toward nonfirstborn males in both tasks while least toward nonfirstborn females in explaining the cartoon ($F=4.97$, df=1/37, $p<.05$) and least toward firstborn females in explaining the water tap ($F=5.83$, df=1/37, $p<.05$) emerged, giving support for H-El.

**Regression results**

Eight independent variables were included in an effort to explain the variance in the fathers' efforts to explain the cartoon to their children. Results are shown in table 8.

**Table 8**

<table>
<thead>
<tr>
<th>Variable</th>
<th>R</th>
<th>$R^2$</th>
<th>RSQ Change</th>
<th>F-test</th>
<th>$p&lt;$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paternal age</td>
<td>.8745</td>
<td>.7648</td>
<td>.7648</td>
<td>120.3292</td>
<td>.0001</td>
</tr>
<tr>
<td>Paternal education</td>
<td>.8927</td>
<td>.7969</td>
<td>.0321</td>
<td>5.631</td>
<td>.001</td>
</tr>
<tr>
<td>Hours father spent with family each week</td>
<td>.8989</td>
<td>.8080</td>
<td>.0111</td>
<td>2.8255</td>
<td>.05</td>
</tr>
<tr>
<td>Family size</td>
<td>.9019</td>
<td>.8135</td>
<td>.0055</td>
<td>0.9977</td>
<td>.001</td>
</tr>
<tr>
<td>Paternal occupation</td>
<td>.9025</td>
<td>.8145</td>
<td>.0010</td>
<td>0.1778</td>
<td>.001</td>
</tr>
<tr>
<td>Hours father spent with child each week</td>
<td>.9029</td>
<td>.8153</td>
<td>.0008</td>
<td>0.1461</td>
<td>.001</td>
</tr>
<tr>
<td>Child's ordinal position</td>
<td>.9037</td>
<td>.8167</td>
<td>.0014</td>
<td>0.2325</td>
<td>.0495</td>
</tr>
<tr>
<td>Sex of sibling</td>
<td>.9039</td>
<td>.8170</td>
<td>.0003</td>
<td>0.0495</td>
<td>.001</td>
</tr>
</tbody>
</table>

**Multiple regression equation**

Standardized beta coefficients were given in a multiple regression equation. The equation is as follows:

Paternal readiness to explain cartoon = $-0.001$(child's sex)$+0.050$

(child's ordinal position)$+0.647$(paternal age)$+0.324$(paternal
education) + .036 (paternal occupation) + -.090 (family size) + -.024 (sex of sibling) + -.064 (hours father spent with child each week) + -.070 (hours father spent with family each week). The intercept=.119; R=.904; R²=.817; F-value=14.385; and p<.005.

Variables

Our model explained a total of 82 per cent of the overall variance although the child's sex or ordinal position failed to significantly contribute to the model. Again, the father's age and education contributed the most (80 per cent) to the total.

TABLE 9

PATERNAL EXPLANATION OF CARTOON

<table>
<thead>
<tr>
<th>Variable</th>
<th>R</th>
<th>R²</th>
<th>RSQ Change</th>
<th>F-test</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours father spent with child</td>
<td>.3962</td>
<td>.1570</td>
<td>.1570</td>
<td>6.890</td>
<td>.005</td>
</tr>
<tr>
<td>each week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family size</td>
<td>.4847</td>
<td>.2349</td>
<td>.0779</td>
<td>3.667</td>
<td>.01</td>
</tr>
<tr>
<td>Paternal age</td>
<td>.5154</td>
<td>.2656</td>
<td>.0307</td>
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<td></td>
</tr>
<tr>
<td>Paternal education</td>
<td>.5260</td>
<td>.2873</td>
<td>.0217</td>
<td>0.7438</td>
<td></td>
</tr>
<tr>
<td>Child's birth position</td>
<td>.5505</td>
<td>.3030</td>
<td>.0157</td>
<td>0.7438</td>
<td></td>
</tr>
<tr>
<td>Hours father spent with family</td>
<td>.5552</td>
<td>.3082</td>
<td>.0052</td>
<td>0.2406</td>
<td></td>
</tr>
<tr>
<td>each week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paternal occupation</td>
<td>.5575</td>
<td>.3109</td>
<td>.0027</td>
<td>0.1195</td>
<td></td>
</tr>
<tr>
<td>Sex of sibling</td>
<td>.5586</td>
<td>.3121</td>
<td>.0012</td>
<td>0.0521</td>
<td></td>
</tr>
<tr>
<td>Child's sex</td>
<td>.5589</td>
<td>.3123</td>
<td>.0003</td>
<td>0.0121</td>
<td></td>
</tr>
</tbody>
</table>

Multiple regression equation

Standardized betas were given in equation form. The equation is as follows:

Paternal readiness to offer an explanation of water tap = .038 (child's sex) + .145 (child's ordinal position) + .371 (father's age) + .244 (father's education) + .075 (father's occupation) + .337 (family
size) + .039 (sex of sibling) + .240 (hours father spent with child each week) + .604 (hours father spent with family each week). The intercept value is 3.54; \( R^2 = .312 \); \( F \)-value = 1.46 which is not significant.

**Variables**

Our model explained only 31 per cent of the total variance in the father's efforts to explain the cartoon as compared to 82 per cent in explaining the variance in explaining the cartoon. Thus, fathers explained the tap differently than they explained the cartoon, possibly thinking the water tap was too far advanced for their children or not interesting to their daughters. Another variable appears to be missing in our efforts to explain how fathers would explain the water tap. The child's sex and ordinal position failed to make a significant contribution to our model while the number of hours the father spent with the child and family size did.

**Summary**

It appears that among our sample, fathers held higher expectations for their sons—especially if they are firstborn—than for their daughters. Fathers also showed a greater readiness to offer an explanation to their sons than to their daughters.

Among birth ordinal positions, no significant difference emerged between the two groups as to paternal expectations. Fathers did tend to show a greater readiness to offer an explanation to their firstborns but spent more time in doing so with their non-firstborns.
Paternal Involvement

Paternal involvement was an overall rating of the father's attempts to intervene or assist their children in completion of the puzzle. Scores were given on a scale from one to five. Interrater reliability score for this area was .81.

Sex

Hypothesis H-S3 predicted that fathers would be more involved in the performance of their male children than in that of their female children. As the data on table 3 indicates, little difference was found between the two sexes. We thus fail to reject the null hypothesis.

Birth Order

Hypothesis H-B3 predicted that fathers would show more involvement in the performance of their firstborn than in that of their nonfirstborn. Again, very little difference was found between the two groups. Therefore, we cannot support this hypothesis.

Interaction

No significant interaction or combined effect appeared between sex by birth order. Therefore of three measures, this is the only one not to find a significant interaction effect.

Regression Results

Nine independent variables were used to explain paternal involvement with their child's performance. See table 10 for the results.
Table 10

Paternal Involvement

<table>
<thead>
<tr>
<th>Variable</th>
<th>R</th>
<th>R²</th>
<th>RSQ Change</th>
<th>F-test</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paternal age</td>
<td>.8852</td>
<td>.7837</td>
<td>.7837</td>
<td>134.0198</td>
<td>.0001</td>
</tr>
<tr>
<td>Hours father spends</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with family weekly</td>
<td>.8920</td>
<td>.7957</td>
<td>.0121</td>
<td>2.8305</td>
<td>.05</td>
</tr>
<tr>
<td>Child's sex</td>
<td>.8959</td>
<td>.8027</td>
<td>.0070</td>
<td>1.2342</td>
<td></td>
</tr>
<tr>
<td>Hours father spends</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with child weekly</td>
<td>.8986</td>
<td>.8075</td>
<td>.0048</td>
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<td></td>
</tr>
<tr>
<td>Paternal occupation</td>
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<td>.8102</td>
<td>.0027</td>
<td>.4630</td>
<td></td>
</tr>
<tr>
<td>Paternal education</td>
<td>.9011</td>
<td>.8120</td>
<td>.0018</td>
<td>.3120</td>
<td></td>
</tr>
<tr>
<td>Family size</td>
<td>.9017</td>
<td>.8131</td>
<td>.0012</td>
<td>.1916</td>
<td></td>
</tr>
<tr>
<td>Sex of sibling</td>
<td>.9023</td>
<td>.8142</td>
<td>.0011</td>
<td>.1722</td>
<td></td>
</tr>
<tr>
<td>Child's ordinal position</td>
<td>.9024</td>
<td>.8143</td>
<td>.0001</td>
<td>.0129</td>
<td></td>
</tr>
</tbody>
</table>

Multiple regression equation

The multiple regression equation was done using the standardized beta coefficients. The equation is as follows:

Total paternal involvement = .138 (child's sex) + .015 (child's ordinal position) + .698 (paternal age) + .113 (paternal education) + -.101 (paternal occupation) + -.053 (family size) + -.051 (sex of sibling) + -.086 (hours father spends with child each week) + -.100 (hours father spends with family each week). The intercept = .43741; R = .9024; R² = .8144; F-value = 14.129; and p < .001.

Paternal Questions

Interrogative statements by the father were counted during each task and them totalled. Only the totals were examined for significant differences. A very high inter-rater reliability score of .91 was achieved for this section.
Sex

Hypothesis H-S4 predicted that fathers would ask more questions of their male children than female. As the data on table 3 indicates, very little difference appeared between the two groups, thus we must fail to reject the null hypothesis.

Birth order

Hypothesis H-B4 predicted that fathers would ask more questions of their firstborn children as compared to their non-firstborn children. Again, no significant difference appeared between the two groups. We fail to reject the null hypothesis.

Interaction

No significant interaction or combined effects appeared between the child's sex and birth ordinal position.

TABLE 11
PATERNAL QUESTIONS

<table>
<thead>
<tr>
<th>Variables</th>
<th>R</th>
<th>R^2</th>
<th>RSQ Change</th>
<th>F-test</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours father spends with family</td>
<td>.3361</td>
<td>.1130</td>
<td>.1130</td>
<td>4.7123</td>
<td>.01</td>
</tr>
<tr>
<td>Hours father spends with child</td>
<td>.4123</td>
<td>.1700</td>
<td>.0570</td>
<td>2.8713</td>
<td>.05</td>
</tr>
<tr>
<td>Family size</td>
<td>.4702</td>
<td>.2211</td>
<td>.0511</td>
<td>2.2966</td>
<td></td>
</tr>
<tr>
<td>Paternal occupation</td>
<td>.5057</td>
<td>.2557</td>
<td>.0347</td>
<td>1.5857</td>
<td></td>
</tr>
<tr>
<td>Child's sex</td>
<td>.5274</td>
<td>.2781</td>
<td>.0224</td>
<td>1.0241</td>
<td></td>
</tr>
<tr>
<td>Child's ordinal position</td>
<td>.5444</td>
<td>.2963</td>
<td>.0182</td>
<td>.8276</td>
<td></td>
</tr>
<tr>
<td>Paternal education</td>
<td>.5471</td>
<td>.2993</td>
<td>.0030</td>
<td>.1333</td>
<td></td>
</tr>
<tr>
<td>Sex of sibling</td>
<td>.5482</td>
<td>.3005</td>
<td>.0012</td>
<td>.0505</td>
<td></td>
</tr>
<tr>
<td>Paternal age</td>
<td>.5487</td>
<td>.3011</td>
<td>.0005</td>
<td>.0226</td>
<td></td>
</tr>
</tbody>
</table>
Multiple regression equation

Standardized beta coefficients were arranged into an
equation as follows:
Total paternal questions=.172 (child's sex) + -.194 (child's
ordinal position) + -.033 (paternal age) + .058 (paternal education)
+ .262 (paternal occupation) + - .118 (family size) + .039 (sex of
sibling) + -.252 (hours father spends with child weekly) + -.425
(hours father spends with family each week).

The intercept value =38.88; R=.549; R²=.301; R value=1.387
which is not significant.

Variables

Our model utilized all nine independent variables to explain
30 per cent of the total variance. Only two variables, however,
emerged as significant contributors: the number of hours the father
spends with the child and with his family each week. Neither the
child's sex nor ordinal position proved to be significant.

Paternal Informative Statements

Verbal statements which gave new information to the child
were counted during each task and then totalled. These totals
were analyzed for significant differences. An inter-rater reliabil-
ity score of .89 was achieved on this section.

Sex

Hypothesis H-S5 predicted that fathers would direct more
informative statements toward their male children than toward
their female children. According to the data in Table 3, no signi-
significant difference appeared between the two groups. Again, we fail to reject the null hypothesis.

**Birth order**

Hypothesis H-B5 predicted that fathers would direct more informative statements toward their firstborn children. No significant difference appeared (Table 3). We fail to reject the null hypothesis.

**Interaction**

No significant interaction or combined effect appeared.

**TABLE 12**

**PATERNAL INFORMATIVE STATEMENTS**

<table>
<thead>
<tr>
<th>Variables</th>
<th>R</th>
<th>R²</th>
<th>RSQ Change</th>
<th>F-test</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paternal occupation</td>
<td>.2778</td>
<td>.0772</td>
<td>.0772</td>
<td>3.093</td>
<td>.01</td>
</tr>
<tr>
<td>Hours father spends</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with family weekly</td>
<td>.3417</td>
<td>.1167</td>
<td>.0396</td>
<td>1.613</td>
<td></td>
</tr>
<tr>
<td>Paternal age</td>
<td>.3960</td>
<td>.1568</td>
<td>.0401</td>
<td>1.664</td>
<td></td>
</tr>
<tr>
<td>Sex of sibling</td>
<td>.4232</td>
<td>.1791</td>
<td>.0223</td>
<td>.924</td>
<td></td>
</tr>
<tr>
<td>Child's sex</td>
<td>.4455</td>
<td>.1985</td>
<td>.0194</td>
<td>.7976</td>
<td></td>
</tr>
<tr>
<td>Paternal education</td>
<td>.4574</td>
<td>.2092</td>
<td>.0107</td>
<td>.4321</td>
<td></td>
</tr>
<tr>
<td>Hours father spends</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with child weekly</td>
<td>.4650</td>
<td>.2162</td>
<td>.0071</td>
<td>.2790</td>
<td></td>
</tr>
<tr>
<td>Child ordinal position</td>
<td>.4704</td>
<td>.2213</td>
<td>.0051</td>
<td>.1949</td>
<td></td>
</tr>
<tr>
<td>Family size</td>
<td>.4774</td>
<td>.2279</td>
<td>.0066</td>
<td>.2467</td>
<td></td>
</tr>
</tbody>
</table>

**Multiple regression equation**

The multiple regression equation was done using standarized beta coefficients. Total paternal informative statements = - .149 (child's age) + - .147 (child's ordinal position) + - .198 (paternal age) + - .127 (paternal education) + .516 (paternal occupation) +
.120 (family size) + .258 (sex of sibling) + -.070 (hours father spends with child subject) + -.235 (hours father spends with family each week). The Intercept=161.1735; R=.4774; R²=.2279; and F-value=.9509.

Variable

Our model explains almost 23 percent of the total variance. Only the father's occupation (white collar/blue collar) was a significant contributor to explained variance; all other variables were not significant.

Paternal Praise

Praise statements made by the father were counted for each task and then totalled for each father/child pair. These totals were then analyzed for significant differences. An inter-rater reliability of .79 was achieved for this section.

Sex

Hypothesis H-B6 predicted that fathers would praise the performance of their female children more than that of their male children. According to the data on table 3, no significant difference appeared between the two groups.

Birth Order

Hypothesis H-B6 predicted that fathers would praise the performance of their nonfirstborn children more than the performance of their nonfirstborn children. No significant difference appeared between the two groups.
Interaction

No interaction effect appeared, however, when the groups were divided by sex and birth order two things appeared: (1) females remained the higher praised sex; (2) nonfirstborns remained the higher praised birth ordinal position but this was significant only among males (F=5.19, df=1.19, p<.01, see table 4). Non-firstborn females were praised significantly most often, while firstborn males were praised the least (F=4.13, df=1/37, p<.05, see table 4).

Variables

Our model included seven independent variables but only explained 12 per cent of the total variance. It appears then that there are one or more variables which were not included in our consideration. None of the independent variables were significant.

Multiple regression equation

Standardized betas were arranged into an equation.
Total paternal praise = .011 (child's sex) + .006 (child's ordinal position) + -.082 (paternal age) + .086 (paternal education) + .177 (paternal occupation) + -.111 (family size) + .097 (sex of sibling) + .115 (hours father spent with child weekly) + .145 (hours father spent with family weekly). Intercept=202.246; R=.3423; R^2=.117; F-value=.4275 which is not significant.

Paternal Criticism

Critical verbal remarks made by the father were counted during each task and then totalled for each father-child pair.
These totals were then analyzed for significant differences. An inter-rater reliability of .64 was achieved for this area.

**Sex**

Hypothesis H-S7 predicted that fathers would criticize the performance of their male children more often than that of their female children. According to the data on Table 3, fathers did criticize their sons significantly more often than they did their daughters (F=5.26, df=1/37, p<.01). We find support for this hypothesis and conclude that at least among our sample, fathers did indeed criticize the performance of their sons more often than that of their daughters.

**Birth order**

Hypothesis H-B7 predicted that fathers would criticize the performance of their firstborn children more often than the performance of their nonfirstborn. Again, this appears to be the case as fathers in our sample did criticize their firstborn children significantly more often than they did their nonfirstborn children (F=2.89, df=1/37, p<.05, Table 3).

**Interaction**

A significant interaction effect occurred between the child's sex and ordinal position as it affected his receipt of criticism. Fathers criticized their firstborn males most often and their firstborn females least often (F=4.12, df=1/37, p<.05, Table 4).
Regression results

Seven of our nine independent variables were included in a step-wise regression model which explained only 16 percent of the total variance. None of the variables reached significant levels. One or more variables appear to be missing in our consideration.

Summary

In a brief summary, fathers tend to have higher expectations for their sons (especially if they are also firstborn) and show a greater readiness to make explanations to their sons and spend more time in doing so with them. Fathers give significantly more criticism to their sons (again, especially if they are firstborn). Among the two birth ordinal groups, fathers showed no significant differences in their level of expectation or readiness to offer an explanation. Fathers did however, show more criticism toward firstborn children. Overall, fathers tend to show favoritism toward their daughters and nonfirstborn children.

Paternal Supportiveness

Paternal supportiveness was divided into three areas: (1) physical contact; (2) physical proximity; and (3) supportive behavior. Although the hypotheses predicted differences only in the rate of supportive behavior, all three are reported on table 3 and hence will be discussed here also. Major interest will rest upon the outcome of supportive behavior. These behavior were counted for each task and then totalled for each pair. Totals were then analyzed. An inter-rater reliability of .68 was achieved for this area. Findings will be discussed by category only.
Physical contact

According to table 3, females received much more physical contact from their fathers than did males (F=12.05, df=1/37, p.< .01). Also from that table, one can see that nonfirstborn children enjoyed more physical contact with their fathers than did firstborn children (F=11.02, df=1/37, p.< .01). The first finding is probably of little surprise given the strong social norm in America forbidding males to touch each other but does represent an interesting differential reinforcement for sex-appropriate behavior.

When considering the child's sex and birth ordinal position together, one can see that male firstborns receive significantly more contact than do male nonfirstborns (F=27.23, df=1/19, p.< .01, see table 4). Nonfirstborn females receive more contact than firstborn females (F=28.09, df=1/16, p.< .01, see table 4). A significant interaction occurs in that nonfirstborn females receive the most contact while nonfirstborn males the least (F=23.02, df=1/37, p.< .01, see table 4).

Physical proximity

Physical closeness between father and child failed to show any significant differences between categories of sex or birth order.

Supportive behavior

Table 3 revealed that fathers gave significantly more supportive behavior toward their daughters than toward their sons (F=4.89, df=1/37, p.< .05). This is just as hypothesis H-28 had
predicted. No significant difference appeared between ordinal positions. We fail to reject the null hypothesis in H-B8.

**Conclusion**

Fathers do give significantly more supportive behavior to females than to their male children. A significant interaction appears between the child's sex and ordinal position in regard to physical contact with the father.

**TABLE 13**

**PATERNAL SUPPORTIVE BEHAVIOR**

<table>
<thead>
<tr>
<th>Variable</th>
<th>R</th>
<th>R²</th>
<th>RSQ Change</th>
<th>F-test</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paternal occupation</td>
<td>.3718</td>
<td>.1382</td>
<td>.1382</td>
<td>5.9346</td>
<td>.005</td>
</tr>
<tr>
<td>Child's ordinal position</td>
<td>.4968</td>
<td>.2468</td>
<td>.1086</td>
<td>5.1892</td>
<td>.01</td>
</tr>
<tr>
<td>Hours father spends with child weekly</td>
<td>.5406</td>
<td>.2922</td>
<td>.0454</td>
<td>2.8450</td>
<td>.05</td>
</tr>
<tr>
<td>Family size</td>
<td>.5855</td>
<td>.3428</td>
<td>.0506</td>
<td>2.8169</td>
<td>.05</td>
</tr>
<tr>
<td>Paternal age</td>
<td>.5942</td>
<td>.3531</td>
<td>.0103</td>
<td>.5267</td>
<td></td>
</tr>
<tr>
<td>Paternal education</td>
<td>.5969</td>
<td>.3563</td>
<td>.0032</td>
<td>1.605</td>
<td></td>
</tr>
<tr>
<td>Sex of sibling</td>
<td>.6013</td>
<td>.3616</td>
<td>.0053</td>
<td>1.2562</td>
<td></td>
</tr>
<tr>
<td>Hours father spends with family weekly</td>
<td>.6033</td>
<td>.3640</td>
<td>.0024</td>
<td>.1139</td>
<td></td>
</tr>
<tr>
<td>Child's sex</td>
<td>.6038</td>
<td>.3645</td>
<td>.0005</td>
<td>.0229</td>
<td></td>
</tr>
</tbody>
</table>

**Multiple regression equation**

The multiple regression equation was done using standarized beta coefficients. Total paternal supportiveness = -.025 (child's age) + .479 (child's ordinal position) + .116 (paternal age) + .086 (paternal education) + -.412 (paternal occupation) + -.337 (family size) + -.076 (sex of sibling) + -.252 (hours father spends with child each week) + .071 (hours father spends with family each
each week). The Intercept=41.803; R=.604; \( R^2=.365 \); and F-value=1.848.

**Variables**

Four independent variables were significant contributors to the total explained variance: (1) paternal occupation, (2) child's ordinal position, (3) hours father spends with the subject weekly, and (4) family size. The child's sex was the lowest change agent.

**Total Paternal Time**

A stopwatch was used to determine the amount of time each father spent with his child in each task. Time lengths for tasks 1, cartoon, and 3, explanation of water tap, were reported earlier under paternal readiness of explanation. Times were totalled for each pair and then analyzed for significant differences. These findings will be discussed here.

**Sex**

Hypothesis H-S9 predicted that fathers would spend more time with their female children in completing the four tasks. From table 3, the data reports no statistically significant trend moving in that direction. Again, we must fail to reject the null hypothesis.

**Birth order**

Hypothesis H-B9 predicted that fathers would spend more time with their nonfirstborn children in completing the four tasks than they would with their firstborn children. This is
supported by significant differences reported on table 3 (F=3.10, df=1/37, p.<.01). It thus can be concluded that among our sample, fathers did spend more time with their nonfirstborns in doing the four tasks. This is an important item in that the amount of time the father spends with his child might serve as an objective measure of the quality of time together, the emotional bind between the pair, or the ease and efficiency of their communication.

Interaction

No significant interaction effect occurred between the child's sex and birth ordinal position, see table 4. However, when the time lengths were divided into the four categories it was found that fathers spent significantly more time with non-firstborn females than with their firstborn female children (F=5.97, df=1/16, p.<.05, see table 4). It would thus appear that the effect of the child's sex and ordinal position as it effected the amount of time fathers spent with their children in completing the tasks was more important for females than for males.

---

**TABLE 14**

**TOTAL PATERNAL TIME**

<table>
<thead>
<tr>
<th>Variable</th>
<th>R</th>
<th>$R^2$</th>
<th>RSQ Change</th>
<th>F-test</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paternal occupation</td>
<td>.3110</td>
<td>.0967</td>
<td>.0967</td>
<td>3.9615</td>
<td>.01</td>
</tr>
<tr>
<td>Hours father spends with child weekly</td>
<td>.4728</td>
<td>.2236</td>
<td>.1269</td>
<td>5.8820</td>
<td>.005</td>
</tr>
</tbody>
</table>
TABLE 14--Continued

<table>
<thead>
<tr>
<th>Variable</th>
<th>R</th>
<th>$R^2$</th>
<th>RSQ Change</th>
<th>F-test</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours father spends</td>
<td>.5194</td>
<td>.2698</td>
<td>.0462</td>
<td>2.8153</td>
<td>.05</td>
</tr>
<tr>
<td>with family weekly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paternal age</td>
<td>.5316</td>
<td>.2826</td>
<td>.0128</td>
<td>.6070</td>
<td></td>
</tr>
<tr>
<td>Child's sex</td>
<td>.5375</td>
<td>.2889</td>
<td>.0063</td>
<td>.2913</td>
<td></td>
</tr>
<tr>
<td>Child's ordinal position</td>
<td>.5436</td>
<td>.2955</td>
<td>.0065</td>
<td>.2973</td>
<td></td>
</tr>
<tr>
<td>Family size</td>
<td>.5498</td>
<td>.3023</td>
<td>.0068</td>
<td>.3022</td>
<td></td>
</tr>
<tr>
<td>Sex of sibling</td>
<td>.5508</td>
<td>.3034</td>
<td>.0012</td>
<td>.0501</td>
<td></td>
</tr>
</tbody>
</table>

Multiple regression equation

The multiple regression equation was done using standarized beta coefficients. The total paternal time= -0.095 (child's sex) + 0.173 (child's ordinal position) -0.123 (paternal age) + 0.017 (paternal education) + 0.448 (paternal occupation) -0.114 (family size) -0.045 (sex of sibling) -0.367 (hours father spends with child subject each week) + 0.171 (hours father spends with family each week). The Intercept=769.29; R=.551; $R^2=.304$; and F-value= 1.405.

Variable

Three independent variables were significant contributors to the explained variance. They include: (1) paternal occupation, (2) the hours the father spends with the child, and (3) the hours the father spends with the family. Both the child's sex and birth ordinal position failed to be significant.
Questions by Child

The only hypotheses concerning the child's performance, or behavior attempted, was to predict differences in the number of questions the child would ask his or her father during the tasks. A record was made of each question, totalled, and then analyzed. An inter-rater reliability score of .8447 was achieved in this area.

Sex

Hypothesis H-S10 suggested that male children would ask more questions of their father than would female children. According to the data quoted in table 5, the opposite appears to be true. Female children asked significantly more questions of their fathers than did male children ($F=2.85, df=1/37, p<.05$). We can then reject both the null hypothesis and H-S10 as stated, and propose that female children will ask more questions.

Birth order

Hypothesis H-B10 predicted that firstborn children would ask more questions than nonfirstborn children. Again, table 5 reveals a statistically nonsignificant trend for this to be true. We must fail to reject the null hypothesis.

Interaction

Several interesting events occur when comparing the children's number of questions by the children's sex and ordinal positions. First, firstborn males ask significantly more questions than do nonfirstborn males ($F=3.60, df=1/19,$
p. < .05). Third, a significant interaction effect occurs between the child's sex and ordinal position, in that nonfirstborn females ask the most questions and nonfirstborn males ask the least (F=3.31, df=1/37, p. < .05).

**TABLE 15**

**QUESTIONS BY CHILD**

<table>
<thead>
<tr>
<th>Variable</th>
<th>R</th>
<th>R²</th>
<th>RSQ Change</th>
<th>F-test</th>
<th>p &lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father's age</td>
<td>.5543</td>
<td>.3072</td>
<td>.3072</td>
<td>16.4282</td>
<td>.005</td>
</tr>
<tr>
<td>Family size</td>
<td>.5852</td>
<td>.3424</td>
<td>.0352</td>
<td>1.9264</td>
<td>.553</td>
</tr>
<tr>
<td>Hours father spends with child weekly</td>
<td>.6179</td>
<td>.3818</td>
<td>.0394</td>
<td>2.8281</td>
<td>.554</td>
</tr>
<tr>
<td>Hours father spends with family weekly</td>
<td>.6274</td>
<td>.3936</td>
<td>.0118</td>
<td>.6614</td>
<td>.543</td>
</tr>
<tr>
<td>Sex of sibling</td>
<td>.6333</td>
<td>.4010</td>
<td>.0075</td>
<td>.4113</td>
<td>.553</td>
</tr>
<tr>
<td>Child's ordinal position</td>
<td>.6394</td>
<td>.4088</td>
<td>.0078</td>
<td>.4204</td>
<td>.554</td>
</tr>
<tr>
<td>Child's sex</td>
<td>.6459</td>
<td>.4172</td>
<td>.0084</td>
<td>.4460</td>
<td>.553</td>
</tr>
<tr>
<td>Paternal occupation</td>
<td>.6517</td>
<td>.4248</td>
<td>.0076</td>
<td>.3955</td>
<td>.553</td>
</tr>
<tr>
<td>Paternal education</td>
<td>.6532</td>
<td>.4267</td>
<td>.0019</td>
<td>.0976</td>
<td>.553</td>
</tr>
</tbody>
</table>

**Multiple regression equation**

The multiple regression equation was done using standarized beta coefficients. The questions by child = -.300 (child's age) + .572 (child's birth ordinal position) + -.453 (paternal age) + -.008 (paternal education) + .08 (paternal occupation) + .015 (family size) + .110 (sex of sibling) + -.224 (hours father spends with child each week) + .328 (hours father spends with family each week). Intercept=2.95, R=.734; R²=.539; F-value=3.768; p. < .01.
Variable

Our model thus explains almost 43 percent of the total variance. Again, father's age, and the number of hours the father spent with the child made the largest contributions; while his occupation and educational level made the least. The child's sex and ordinal position failed to make significant contributions.

Chapter Summary

Perhaps it would be helpful to the reader to briefly summarize the results of our t-test. Fathers did have higher expectations for their sons, especially if they were their first-born. Fathers revealed a greater readiness of explanation for their sons and gave them more criticism. Nonsignificantly, fathers gave more verbal informative cues to them.

For their daughters, fathers gave more physical contact, more supportive behavior, and a closer physical proximity. Nonsignificantly, fathers asked more question of their fathers than did boys.

Fathers showed a higher readiness of explanation toward their firstborn children, although they spent more time in offering them to nonfirstborn children, and gave them more criticism. They also nonsignificantly tended to ask them more questions and be physically closer to them.

Toward their nonfirstborn children, fathers spent more time with them in completing the four tasks and gave them more physical contact. Nonsignificantly, nonfirstborns received more praise and more supportive behavior from their fathers.
CHAPTER 4

SUMMARY AND CONCLUSIONS

The purpose of this study was to determine whether fathers behave differently toward their own five-year-old children as a result of the child's sex and birth ordinal position.

Social scientists have long considered the family to be a primary agent in the socialization of children. More recently, family theorists and researchers have begun exploring the role parents play in teaching their children sex-role identification and in reinforcing sex-appropriate behavior. The large majority of theories in this area follow Freud's identification theory and attempts have been made to link it with social learning theory (Bandura and Walters, 1963), role theory (Parsons, 1955) and reinforcement theory (Cooley, 1959; Hill, 1960). The father has been identified as the parent most likely to differentially treat his child as a result of the child's sex (Parsons, 1955; Bronfonbrenner, 1961; Johnson, 1963; Rothbart & Maccoby, 1966; Goode, 1971; Biller & Meredith, 1974; Margolin & Patterson, 1975; Lynn, 1976). This differential treatment is in turn responsible for the child learning to behave as a boy or girl.

Research also has been conducted reporting differences among children as a result of their ordinal positions. Theorists
reason that parents too are the reason for this differentiation (Hamid, 1970; Platt et al., 1970).

This study was undertaken to document ways in which fathers accomplish this task as they interact with their children. The author also proposed that the child's sex might interact with his birth ordinal position.

Twenty-one hypotheses in nine paternal behaviors and one child behavior were empirically tested by observing thirty-nine pairs of fathers and five-year-old children complete four laboratory tasks. This data was analyzed with the aid of the SPSS computer package; t-tests, step-wise regression, and ANOVA were used.

This summary is organized around the ten areas.

Paternal Expectations

Hypothesis H-S1 predicted that fathers would have higher expectations for their sons than for their daughters. Among our sample, this appeared to be true for both tasks.

Hypothesis H-B1 predicted that fathers would have higher expectations of their firstborn than of their nonfirstborn. Our data failed to reveal any significant difference. Sex and birth order did appear to interact however, in that fathers expected the most from their firstborn males and the least from their firstborn females.

The regression model explained ninety-one percent of the total variance. Paternal age, education and occupation were the most
important contributors as well as the child's birth ordinal position and the number of hours the father spends with the child.

**Paternal Readiness of Explanation**

Hypothesis H-S2 predicted that fathers would show a greater readiness to offer an explanation to their sons than to their daughters. Our data supports this hypothesis as fathers did so for both tasks (cartoon and water tap).

Hypothesis H-B2 predicted that fathers would show a greater readiness to offer an explanation to their firstborn than to their nonfirstborn. Fathers failed to significantly differentiate between the two positions except for spending more time in making their explanations to their nonfirstborns. An interaction effect appeared in that fathers spent the most time in making their explanations to nonfirstborn males and least to nonfirstborn females.

Two regression models were run, one for each of the explanatory tasks (cartoon and water faucet drawings). In explaining the cartoon, eighty-two per cent of the overall variance was explained primarily by the father's age, education, and number of hours the father spends with his family each week. Thirty-one per cent of the total variance was accounted for in explaining the internal workings of a water faucet. The number of hours the father spends with his family each week and the size of his family proved to be significant factors. The child's sex or ordinal position failed to be significant in either instance.
**Paternal Involvement**

No significant difference was found among groups as to the amount of assistance fathers gave their children in completing the puzzle. Thus, hypotheses H-S3 (which predicted greater involvement for males) and H-B3 (which predicted greater involvement for firstborns) failed to find statistical support.

Nine independent variables were utilized in our regression model to explain 61.4 percent of the total variance. The father's age and the number of hours he spends with the child were significant contributors explaining 79.5 percent together. The child's sex was the third largest contributor at .007 but failed to reach a significant level as did the other six.

**Paternal Questions**

Hypothesis H-S4 predicted that fathers would ask more questions of their sons than of their daughters. Our data failed to reveal a significant trend in this direction.

Hypothesis H-B4 predicted that fathers would ask more questions of their firstborn children. Our data failed to support this hypothesis.

The stepwise regression model accounted for only thirty percent of the total variance. The number of hours the father spent with his family and with the child subject were the only two significant contributors to explained variance. All others failed to reach significant levels.
Informative Statements

Hypothesis H-S5 predicted that fathers would give more informative cues to their sons; our data failed to support this hypothesis.

Hypothesis H-B5 predicted that fathers would give more informative statements to their firstborn children than nonfirst-born. Our data did not support this hypothesis.

Our regression model explained 22.7 percent of the overall variance. Only the father's occupation (white-collar versus blue-collar) reached a significant level as an explainer. White collar fathers appeared to give more instructions to their children. All other variables were not significant.

Paternal Praise

Hypothesis H-S6 predicted that fathers would praise the performance of their female children more than that of their male children. Our data failed to support this hypothesis.

Hypothesis H-B6 predicted that fathers would praise the performance of their nonfirstborn more than that of their firstborn. Our data supported the null hypothesis.

The step-wise regression model included seven independent variables which together explained only twelve percent of the total variance. None of the variables reached significant levels. It thus appears that one or more relevant factors were not included.
Paternal Criticism

Hypothesis H-S7 predicted that fathers would criticize the performance of their sons more often than that of their females. Our data supports this conclusion to a highly significant degree.

Hypothesis H-B7 predicted that fathers would criticize the performance of their firstborn children more often than that of their nonfirstborn. Among our sample, this too appeared to be true. A strong interaction occurred between the child's sex and birth ordinal position in that fathers criticized the performance of their firstborn males most often and their firstborn females least often.

Again, our step-wise regression failed to produce any significant explanation of the overall variance. Of the eight included variables, sixteen percent was attributable to these variables. Some relevant factors seem to be missing.

Paternal Supportiveness

This area was comprised of three sub-headings each of which will be summarized separately.

Physical Contact

Females and nonfirstborn children received significantly more physical contact from their fathers than did their respective counterparts. A significant interaction occurred in that nonfirstborn females received the most contact while nonfirstborn males received the least.
Physical Proximity

Closeness of the father to his child failed to show any significant difference among categories of sex or birth order.

Supportive Behavior

Hypothesis H-S8 predicted that fathers would show more supportive behavior toward their daughters than toward their sons. Fathers did tend to give significantly more support to their daughters.

Hypothesis H-B8 predicted that fathers would show significantly more supportive behavior toward their nonfirstborns than toward their firstborns. No such significant difference appeared between groups.

The regression model was successful in explaining 36.4 percent of the total variance. Four factors proved to be significant: paternal occupation, the child's ordinal position, the number of hours the father spends with the subject, and the size of the family. The child's sex was the lowest variable in its ability to add to the model.

Total Paternal Time

Hypothesis H-S9 predicted that fathers would spend more time in completing the four tasks with their female children than with their male children. No such significant difference appeared in our data.

Hypothesis H-B9 predicted that fathers would spend more time in completing the tasks with their nonfirstborn children.
than with their firstborns. Strong support for this hypothesis was found.

Thirty percent of the total variance was explained by our step-wise regression model. Three factors emerged as being significant: the father's occupation, the number of hours he spends with the subject, and the number of hours he spends with his family each week. The child's sex or ordinal position failed to significantly contribute to the model.

No significant interaction or combined effects appeared.

**Questions by Child**

Hypothesis H-S10 predicted that males would ask more questions of their fathers than would females. Our data yielded a significant trend for the opposite to be true.

Hypothesis H-B10 predicted that fathers would receive more questions from their firstborn children than from their nonfirstborn children. No significant difference appeared between the two groups within our sample. A significant interaction effect did appear in that nonfirstborn females asked the most questions whereas nonfirstborn males asked the least.

The step-wise regression model utilized all nine independent variables to explain forty-three percent of the total variance. Two variables were significant: the father's age and the number of hours the father spends with the child subject each week.
Conclusions

After many years of neglect, the father has recently been rediscovered as an important subject of research on the family. He appears to be a primary agent of socialization and with his differential expectations and rewards, motivates his children to adopt the culturally defined sex role and assigns them a position in the family constellation.

This study attempted to empirically define and measure this paternal differentiation and succeeded in some instances. Fathers do behave differently toward their children in terms of that child's sex and birth ordinal position. Each of these variables interacts with one another to affect paternal behavior.

However, consistency does not appear to be the absolute rule among our sample fathers. Evidence appeared which supported the importance of reciprocal role relationships and differential paternal expectation and rewards. Regression emphasized paternal time with the child or the family, his age, education, and occupation as explainers of variance rather than the child's sex or birth order. A summary of hypotheses and findings follow as well as recommendations for future research. (See table 16 and table 17)
### TABLE 16

**SUMMARY OF HYPOTHESES AND RESULTS**

<table>
<thead>
<tr>
<th>Number</th>
<th>Hypotheses</th>
<th>Support</th>
<th>No Support</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-B1</td>
<td>Fathers will hold higher expectations for their firstborn children than for their nonfirstborn children.</td>
<td>X</td>
<td></td>
<td>49-52</td>
</tr>
<tr>
<td>H-B2</td>
<td>Whenever the father is called upon to instruct his child, he will show a greater readiness of explanation--satisfy the child's curiosity--for his nonfirstborn children than for his firstborn children.</td>
<td>X</td>
<td></td>
<td>52-56</td>
</tr>
<tr>
<td>H-B3</td>
<td>Fathers will show more involvement in the performance of firstborn children than in the performance of their nonfirstborn children.</td>
<td>X</td>
<td></td>
<td>57-58</td>
</tr>
<tr>
<td>H-B4</td>
<td>Fathers will ask more questions of their firstborns than of their nonfirstborns.</td>
<td>X</td>
<td></td>
<td>58-60</td>
</tr>
<tr>
<td>H-B5</td>
<td>Fathers will give more informative verbal cues to their firstborn children than to their non-firstborn children.</td>
<td>X</td>
<td></td>
<td>60-62</td>
</tr>
<tr>
<td>Number</td>
<td>Hypotheses</td>
<td>Support</td>
<td>No Support</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------</td>
<td>------------</td>
<td>--------</td>
</tr>
<tr>
<td>H-B6</td>
<td>Fathers will be more likely to praise the performance of their nonfirstborn than the performance of their firstborn.</td>
<td>X</td>
<td></td>
<td>62-63</td>
</tr>
<tr>
<td>H-B7</td>
<td>Fathers will be more likely to criticize the performance of their firstborn children than the performance of their nonfirstborn children.</td>
<td>X</td>
<td></td>
<td>63-65</td>
</tr>
<tr>
<td>H-B8</td>
<td>Fathers will exhibit more supportive behavior toward their nonfirstborn children than toward their firstborn children.</td>
<td>X</td>
<td></td>
<td>65-68</td>
</tr>
<tr>
<td>H-B9</td>
<td>Fathers will spend more time with their nonfirstborn children in completing the tasks than with their firstborn children.</td>
<td>X</td>
<td></td>
<td>68-70</td>
</tr>
<tr>
<td>H-B10</td>
<td>Firstborn children will ask more questions of their father than will nonfirstborn children.</td>
<td>X</td>
<td></td>
<td>71-73</td>
</tr>
<tr>
<td>Number</td>
<td>Hypotheses</td>
<td>Support</td>
<td>No Support</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------------</td>
<td>---------</td>
<td>------------</td>
<td>--------</td>
</tr>
<tr>
<td>H-S1</td>
<td>Fathers will hold higher expectations for their male children than for their female children.</td>
<td>X</td>
<td></td>
<td>49-52</td>
</tr>
<tr>
<td>H-S2</td>
<td>Whenever the father is called upon to instruct his child, he will show a greater readiness of explanation—satisfy his child's curiosity—for his female children than for his male children.</td>
<td>X</td>
<td></td>
<td>52-56</td>
</tr>
<tr>
<td>H-S3</td>
<td>Fathers will show more involvement in the performance of male children than in the performance of female children.</td>
<td>X</td>
<td></td>
<td>57-58</td>
</tr>
<tr>
<td>H-S4</td>
<td>Fathers will ask more questions of their male children than of their female children.</td>
<td>X</td>
<td></td>
<td>58-60</td>
</tr>
<tr>
<td>H-S5</td>
<td>Fathers will give more informative verbal cues to their sons than to their daughters.</td>
<td>X</td>
<td></td>
<td>60-62</td>
</tr>
<tr>
<td>H-S6</td>
<td>Fathers will be more likely to praise the performance of their female children than praise the performance of their male children.</td>
<td>X</td>
<td></td>
<td>62-63</td>
</tr>
<tr>
<td>Number</td>
<td>Hypotheses</td>
<td>Support</td>
<td>No Support</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------</td>
<td>------------</td>
<td>-------</td>
</tr>
<tr>
<td>H-S7</td>
<td>Fathers will be more likely to criticize the performance of their male children than criticize the performance of their female children.</td>
<td>X</td>
<td></td>
<td>63-65</td>
</tr>
<tr>
<td>H-S8</td>
<td>Fathers will exhibit more supportive behavior toward their female children than toward their male children.</td>
<td>X</td>
<td></td>
<td>65-68</td>
</tr>
<tr>
<td>H-S9</td>
<td>Fathers will spend more time with their female children in completing the tasks than with their male children.</td>
<td>X</td>
<td></td>
<td>68-70</td>
</tr>
<tr>
<td>H-S10</td>
<td>Male children will ask more questions of their fathers than will female children.</td>
<td>X</td>
<td></td>
<td>71-73</td>
</tr>
<tr>
<td>H-E1</td>
<td>A significant interaction effect will be found to exist between the child's sex and birth ordinal position.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 17
INTER-RATER RELIABILITY RATINGS

<table>
<thead>
<tr>
<th>Task</th>
<th>Cartoon</th>
<th>Pictures</th>
<th>Water tap</th>
<th>Puzzle</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions by child</td>
<td>.5386</td>
<td></td>
<td></td>
<td></td>
<td>.8447</td>
</tr>
<tr>
<td>Explanation by father</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amount of paternal involvement</td>
<td></td>
<td></td>
<td>.4594</td>
<td></td>
<td>.8067</td>
</tr>
<tr>
<td>Praise by father</td>
<td>.6994</td>
<td>.8504</td>
<td>.8576</td>
<td>.7337</td>
<td>.7853</td>
</tr>
<tr>
<td>Questions by father</td>
<td>.8945</td>
<td>.9290</td>
<td>.9361</td>
<td>.8677</td>
<td>.9068</td>
</tr>
<tr>
<td>Criticism</td>
<td>.5620</td>
<td>.4947</td>
<td>.8528</td>
<td>.6405</td>
<td>.6375</td>
</tr>
<tr>
<td>Informative by father</td>
<td>.8632</td>
<td>.9187</td>
<td>.8718</td>
<td>.9054</td>
<td>.8898</td>
</tr>
<tr>
<td>Physical proximity</td>
<td>.4360</td>
<td>.6164</td>
<td>.6834</td>
<td>.6505</td>
<td>.5957</td>
</tr>
<tr>
<td>Physical contact</td>
<td>.4919</td>
<td>.9256</td>
<td>.6649</td>
<td>.6234</td>
<td>.6765</td>
</tr>
<tr>
<td>Supportive behavior</td>
<td>.8182</td>
<td>.9198</td>
<td>.9371</td>
<td>.6471</td>
<td>.8306</td>
</tr>
<tr>
<td>Overall total Average</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.7495</td>
</tr>
</tbody>
</table>
CHAPTER 5

IMPLICATIONS FOR FUTURE RESEARCH

In order for any research project to be totally successful, it must raise issues and questions which would be fertile for future research. This project has been very successful in this regard.

Primarily, it began the process of identifying just how father communicates sex-role preferential behavior to his children. If he indeed is the one who in our society teaches boys to be boys and girls to be girls, then more of this process should be studied in terms of family dissolution, societal change, and androgyny.

Further research may be conducted to define the roles of sublibings and stepparents. It might also appear that certain family compositions may affect the child's learning and modelling of typical sex-role behavior.

The regression results pointed to gaps within our model. The inclusion of relevant variables no included in our study as well as the refinement of the included variables is a direction which I would hope to further pursue.

Studies might be conducted on non-Mormon fathers and families or upon families representing a cross-section of America.
This would help to determine if fathers uniformly differentiate between the sexes or if this is a function of extraneous variables.

And finally, just how do paternal expectations and the giving of rewards interact? Is it possible that expected behaviors are not always rewarded? Each of these questions are in need of further study. It is hoped this will be undertaken enthusiastically.
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THE CHILD'S SEX AND BIRTH ORDINAL POSITION: ITS EFFECTS
UPON FATHERS' INTERACTION WITH THEIR NATURAL
FIVE-YEAR-OLD CHILDREN IN A SELECTED
PROVO UTAH MORMON SAMPLE

D. Wayne Brown, Sr.
Department of Sociology
M.S. Degree, April 1979

ABSTRACT

Thirty-nine fathers were observed to determine if they interact differently with their child as a result of the child's sex or birth ordinal position.

Results indicated that fathers expected more of their sons, had a higher readiness of explanation for them, and criticized them more often. Fathers gave more praise, physical contact and supportive behavior to their daughters. Birth ordinal effects paralleled and interacted with the child's sex.

Stepwise regression yielded a mean value of 44.16 in explaining the overall variance in dependent variables. It emphasized the number of hours the father spent with his child and family, the father's age, education, and occupation. In comparison to these, the child's sex and ordinal position emerged as having little importance.

COMMITTEE APPROVAL:

James T. Duke, Committee Chairman
M. Gawain Wells, Committee Member
Boyd C. Rollins, Committee Member
Phillip R. Kuz, Committee Member
Bruce A. Chadwick, Department Chairman