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WILLIAM VINCENT. MCDERMOTT

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DIFFERENTIAL INTERACTION PATTERNS WITHIN THE

FAMILIES OF READING-PROBLEM BOYS

by

William Vincent McDermott
A.B. Holy Cross College
M.A. Temple University

A Dissertation
submitted to the Faculty of Graduate Studies
through the Department of
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of the requirements for the Degree
of Doctor of Philosophy at
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1977
ABSTRACT

DIFFERENTIAL INTERACTION PATTERNS WITHIN THE FAMILIES OF READING-PROBLEM BOYS.

by

William Vincent McDermott

The principal purpose of the present study was to discern whether either or both parents of a diagnosed reading-problem (RP) boy would interact differently with him than with his normally-achieving (NA) male sibling. Sixteen parental pairs were directly observed (i.e., videotaped) while having both their RP son and their NA son successively perform a non-reading achievement task (i.e., Block Design). The parents' behaviour with their RP and NA children was quantified according to a reliable communication code and was compared in regard to the following qualitative characteristics of their verbal and nonverbal characteristics: (a) their directing, intrusive, and/or autonomy-inhibiting nature, (b) their negative, devaluing, and/or punitive nature, and (c) their positive, enhancing, and/or rewarding nature.

The general expectation of differential interaction patterns with RPs vs. NAs was clearly demonstrated by the behaviour of one or both parents on nine of the fifteen communication categories employed as dependent measures.
In the case of the fathers, the RPs were the objects of significantly more directing and intrusive communications than were the NAAs. The fathers emitted more Total Direction remarks, partial-task-solutions, and confiscation of the task materials with RPs than with NAAs. The mothers, on the other hand, demonstrated tendencies rather than clearly differential behaviour on these measures in relationship to a child's reading ability alone.

As was anticipated, the fathers were more overtly negative, rejecting, and derogating with RPs than with NAAs. The mothers demonstrated differential negative behaviours only by being more indirectly critical with younger children and by emitting more negative intonations with younger NAAs than with other children.

It was the mothers who were more generally positive with NAAs than with RPs, but the expectation that they would be more actively and enthusiastically positive with NAAs was not supported. In the case of the fathers, no significant differences were evident between RPs and NAAs.

The differences between parents on the dependent measures suggested their having engaged in complementary role behaviour. While the fathers appeared to be responsible for the directing, instructing and the negative feedback throughout the task, the mothers appeared to take responsibility for the encouraging, the soothing, and the
provision of positive feedback. Although the fathers' behaviour was generally supportive of observations made in the few previous studies which had included fathers, the mothers' behaviour was not in line with previous characterizations of them. This suggested that (a) the previous characteristics attributed to these mothers were child- or situation-specific, that (b) they made adaptational and behavioural adjustments within vs. without the nuclear family, or that (c) an individual's behaviour may take on a different "meaning" when viewed within the context of his/her nuclear family unit.

The therapeutic and remedial implications of the present study were that a learning-disabled child's "problems" may not be purely intellectual, cognitive, or academic. Successful remediation for these children may well require intervention into their parents' perceptions of and interaction patterns with them, in addition to academic re-programming. The study's most salient heuristic implications were to demonstrate the viability and value of applying this genre of methodological design to the etiology, ramifications, and dynamics of the learning-disability child's "interpersonal-disabilities" within the nuclear family.
ACKNOWLEDGMENTS

In retrospect, the number of people who have been instrumental in the completion of this project is frightening. First of all, the author extends his heartfelt gratitude to his friend and wife, Karen, whose consideration, support, and Herculean ability to single-parent a family including an obsessed, unreasonable doctoral candidate has been not only impressive, but critical to the successful completion of the project as well as the candidate.

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>iv</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>vii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>xi</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xiii</td>
</tr>
<tr>
<td>CHAPTER</td>
<td></td>
</tr>
<tr>
<td>I INTRODUCTION</td>
<td></td>
</tr>
<tr>
<td>Defining Reading Problems</td>
<td>2</td>
</tr>
<tr>
<td>Reading Problems and Emotional Difficulties</td>
<td>5</td>
</tr>
<tr>
<td>Teacher and Peer Perceptions of Learning-Disabled Children</td>
<td>9</td>
</tr>
<tr>
<td>Parent Perceptions of Learning-Disabled Children</td>
<td>15</td>
</tr>
<tr>
<td>Parent Characteristics</td>
<td>20</td>
</tr>
<tr>
<td>The Family as a Social System</td>
<td>28</td>
</tr>
<tr>
<td>Reading Problems and Family Homeostasis</td>
<td>35</td>
</tr>
<tr>
<td>Summary</td>
<td>41</td>
</tr>
<tr>
<td>Intrafamilial Differences</td>
<td>42</td>
</tr>
<tr>
<td>Hypotheses</td>
<td>48</td>
</tr>
<tr>
<td>II METHOD</td>
<td>51</td>
</tr>
<tr>
<td>Subjects</td>
<td>51</td>
</tr>
<tr>
<td>Contact Procedure</td>
<td>57</td>
</tr>
<tr>
<td>Apparatus</td>
<td>59</td>
</tr>
<tr>
<td>Experimental Procedure</td>
<td>60</td>
</tr>
<tr>
<td>Measures</td>
<td>64</td>
</tr>
<tr>
<td>Scoring Procedure</td>
<td>69</td>
</tr>
<tr>
<td>Interjudge Reliability</td>
<td>72</td>
</tr>
<tr>
<td>III RESULTS</td>
<td>77</td>
</tr>
<tr>
<td>IV DISCUSSION</td>
<td>104</td>
</tr>
<tr>
<td>Differential Interaction with RPs and NAs</td>
<td>105</td>
</tr>
<tr>
<td>Parental Differences</td>
<td>116</td>
</tr>
<tr>
<td>The Communicational Environment of Reading-Problem Boys</td>
<td>121</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Implications for Remediation</td>
<td>125</td>
</tr>
<tr>
<td>Recommendations for Future Research</td>
<td>127</td>
</tr>
<tr>
<td>V SUMMARY AND CONCLUSIONS</td>
<td>131</td>
</tr>
<tr>
<td>APPENDIX</td>
<td></td>
</tr>
<tr>
<td>A The Child Behavior Rating Scale</td>
<td>134</td>
</tr>
<tr>
<td>B Contact Letter Sent to Families</td>
<td>139</td>
</tr>
<tr>
<td>C Confirmation of Appointment Letter</td>
<td>142</td>
</tr>
<tr>
<td>D Consent Form</td>
<td>145</td>
</tr>
<tr>
<td>E Code Book and Sample Scoring Sheets</td>
<td>148</td>
</tr>
<tr>
<td>REFERENCE NOTES</td>
<td>179</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>180</td>
</tr>
<tr>
<td>VITA AUCTORIS</td>
<td>192</td>
</tr>
</tbody>
</table>
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Characteristics of the Participating Families</td>
<td>53</td>
</tr>
<tr>
<td>2</td>
<td>Mean Ages and SDs (in months) for Read x Birth Order Subgroupings</td>
<td>58</td>
</tr>
<tr>
<td>3</td>
<td>Interjudge Reliabilities (r) and Coefficients of Alienation (k) for Verbal and Nonverbal Coding Categories</td>
<td>76</td>
</tr>
<tr>
<td>4</td>
<td>Birth Order (BO) x Testing Order (TO) x Reading Ability (Read) x Parents (Parent) Analysis of Variance for Both Parents' Total Verbalization Scores</td>
<td>79</td>
</tr>
<tr>
<td>5</td>
<td>Birth Order (BO) x Testing Order (TO) x Reading Ability (Read) Analysis of Variance for Mothers' Total Verbalization Scores</td>
<td>81</td>
</tr>
<tr>
<td>6</td>
<td>Means and Standard Deviations for Communication Category Frequencies by Both-Parents with RPs and NAs</td>
<td>83</td>
</tr>
<tr>
<td>7</td>
<td>Sources of Variance and F Ratios of Relevant Findings (by Communication Category) from the Birth Order x Test Order x Read x Parent Analyses of Variance for Both Parents</td>
<td>85</td>
</tr>
<tr>
<td>8</td>
<td>Means and Standard Deviations for Communication Category Frequencies by Mothers with RPs and NAs</td>
<td>87</td>
</tr>
<tr>
<td>9</td>
<td>Sources of Variance and F Ratios of Relevant Findings (by Communication Category) from the Birth Order x Test Order x Read Analyses of Variance for Mothers</td>
<td>89</td>
</tr>
<tr>
<td>10</td>
<td>Means and Standard Deviations for Communication Category Frequencies by Fathers with RPs and NAs</td>
<td>91</td>
</tr>
</tbody>
</table>
Sources of Variance and F Ratios of Relevant Findings (by Communication Category) from the Birth Order x Test Order x Read Analyses of Variance for Fathers

93
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mean Communication Category Frequencies by Both Parents with RPs and NAs</td>
<td>84</td>
</tr>
<tr>
<td>2</td>
<td>Mean Communication Category Frequencies by Mothers with RPs and NAs</td>
<td>88</td>
</tr>
<tr>
<td>3</td>
<td>Mean Communication Category Frequencies by Fathers with RPs and NAs</td>
<td>92</td>
</tr>
<tr>
<td>4</td>
<td>Mean Total Verbalization Frequencies by Mothers, Fathers, and Both Parents with Older and Younger RPs and NAs (Mothers)</td>
<td>101</td>
</tr>
<tr>
<td>5</td>
<td>Mean Total Verbalization Frequencies by Mothers, Fathers, and Both Parents with Older and Younger RPs and NAs (Fathers)</td>
<td>101</td>
</tr>
<tr>
<td>6</td>
<td>Mean Total Verbalization Frequencies by Mothers, Fathers, and Both Parents with Older and Younger RPs and NAs (Both Parents)</td>
<td>101</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

There is a relatively recent, yet persistent, body of clinical and empirical literature which has concerned itself with the structure and dynamics of the family. The empirical literature has moved beyond its initial investigations of the functional role of the nuclear family unit in contributing to schizophrenic symptomatology (Haley, 1962; Mishler & Waxler, 1968; Wynne & Singer, 1963) to investigations of a broad spectrum of what traditionally have been thought of as intrapersonal or intrapsychic, psychiatric or psychological difficulties.

A general underlying theoretical assumption pursued in this literature is that the nuclear family unit (as opposed to any individual member) stands inspection as a dynamic, homeostatic, organismic interactional system which plays a critical role in the etiology and/or maintenance of its individual members' psychosocial development and functioning (Jackson, 1957; Parsons & Bales, 1955). As a result, individual symptomatology or distress is construed as a manifestation of family-system disruption or pathology (Vogel & Bell, 1960).

Empirical investigations have, to date, attacked the family-system processes related to a wide range of dif-
difficulties along the continuum from the psychoses, through the neuroses, character disorders, delinquency and behaviour problems (Jacob, 1975; Riskin & Faunce, 1972). A more recent development, however, has been the growing research interest in investigating the relationship between family dynamics and children's school problems (Haley & Glick, 1971, pp. 234-237), including "learning" difficulties (Campbell, 1972; Gerber, 1973; Gerber & Kaswan, 1971). More specifically, Miller and his associates (Miller & Westman, 1964, 1966; Westman, Miller, & Arthur, 1966; Miller, Note 2), as well as Peck (1970, 1971; Peck & Stackhouse, 1973) have investigated the possibility of a relationship between family interaction and a child's reading problem.

Defining Reading Problems

The interest in marrying family theory and research to reading-problem phenomena is a relatively recent trend in the long and varied history of attempts to study, explain, and treat the problems of students who have repeatedly failed to learn basic reading skills. Applebee (1971) notes that since W. P. Morgan's publication of "A Case of Congenital Word Blindness" in 1896, research in reading problems has been characterized both by conflicting results and by the application of the frequently opposing theoretical orientations and conceptual frameworks of disciplines ranging from education to medicine.
This multidisciplinary, empirically diverse attention to reading problems is attributed to "the underlying view of a reading disability as a unified syndrome in a medical sense, a collection of characteristic symptoms presumably indicative of a more basic disorder requiring treatment" (Applebee, 1971, p. 92). Hence, a characteristic of the research tradition applied to "reading retardation," "reading disability," "specific reading disability," "dyslexia," "developmental dyslexia," etc. (as the "syndrome" is variously labelled) has been to attempt to ferret out the definitive etiological explanation from a position of erroneously assuming homogeneity in the population of reading disorders, while continually redefining the population in terms of a residual disorder. That is, the "syndrome" becomes the failure to learn to read with expected proficiency after empirically demonstrated critical factors have been ruled out. In this tradition it is possible to arrive at definitions of the research population such as Eisenberg's (1966), that: "operationally, specific reading disability may be defined as the failure to learn to read with normal proficiency despite conventional instruction, a culturally adequate home, proper motivation, intact senses, normal intelligence, and freedom from gross neurological defect" (p. 360).

Applebee decries this tradition, however, by asserting that: "In spite of the intermittent efforts of many and
the dedicated and continuing efforts of a few, there has been no real success in what, for the school child at least, must be the most important goals of such research (p. 91); these being, in Applebee's view, prediction of, etiological explanation for, and remediation of individual cases of reading disorder.

Adams (1969) has compellingly surveyed and illuminated the profound difficulties inherent in attempts to derive a consensual definition of reading disorder (i.e., dyslexia) and, like Applebee, questions the benefit of arriving at such consensus as follows:

Sometimes a word gets born which, rather than live as a servant to man, moves out in life like a Frankenstein monster wreaking havoc in the discourse of sensible men. Dyslexia is such a word. Its meaning is obscure and it has divided the efforts of professional men when collaboration would have been the better course. (p. 616)

Similarly, Gibson and Levin (1975) suggest that: "The problem of real significance . . . is understanding rather than naming [reading problems]" (p. 485).

If, indeed, the investigations into reading difficulties have, to date, been fruitless in the search for a unified, underlying symptom complex, certainly the theoretical, empirical, and methodological diversity noted above has allowed illumination of the many different facets of reading problems. In this connection, varying "types" of reading problems have been attributed to as varied etiological phenomena (either alone or in interaction) as
endocrinological anomalies (Green & Perlman, 1971), genetic predisposition (Hallgren, 1950), visual and auditory sensory dysfunction (Johnson & Mykelbust, 1967, pp. 147-192), cerebral dysfunction (Doehring, 1968), developmental lag (Critchley, 1964), and emotional disorders (Connolly, 1971).

Reading Problems and Emotional Difficulties

Those who have pursued the emotional concomitants of reading problems have done so in response to observations such as Bond and Tinker's (1973) that:

When the behaviour of disabled readers is compared with that of pupils making normal progress, it becomes obvious that there are differences between the two groups in personal and social adjustment. The disabled readers are characterized by greater degrees of emotional and social maladjustment. (p. 135)

Connolly (1971) and Gardner and Sperry (1974) have reviewed the literature focussing on the social and emotional concomitants of learning disabilities. In general, while Bond and Tinker (1973), Rabinovitch (1959), and Sampson (1966) have attended more selectively to the research involving children with diagnosed reading difficulties. Taken as a whole, the results of these experimental and case studies tend to demonstrate a positive relationship between emotional problems and learning problems.

Various investigations have found reading problem children (predominantly boys) to be "more highly strung," "less mature," "more aggressive," "more withdrawn," "more anxious," "less secure," "more defensive" and generally
tending toward the less acceptable or more pathological end of whatever dimension or trait is being discussed.

**Causality.** As might be expected, the issue of causality has received a good deal of attention in this literature, just as etiological concerns have attended other facets of reading difficulties. Gann (1945), for example, is of the opinion that reading problems should be considered a manifestation of personality problems, and that personality dysfunction precedes and deters reading achievement. This is a position which is popular among many psychoanalytic or psychodynamic writers, such as Sylvester and Kunst (1943), who presume that the school-age child's anxieties surrounding his unacceptable impulses and unresolved conflicts (concerning particularly aggression) become unconsciously involved with the symbolic aspects of the learning situation. This type of formulation suggests that the child's defending against associations to the teacher as authority figure, idiosyncratic meanings of letter configurations, and the aggressive component of exploratory function amount to a neurotic inhibition of the learning process.

There are, on the other hand, those proponents of the opposing position who posit that it is the reading difficulty which precedes emotional maladjustment (Fernald, 1943). That is, the child's inability to achieve in the classroom because of reading difficulties results in frustration, self-deprecation, anxiety, and other indica-
tions of personality maladjustment.

Finally, there are those who assume the presently more acceptable intermediate stance in the causality issue by noting the circularity involved in the process of poor achievement → frustration → anxiety/inferiority feelings → detrimental attention and motivation → poor achievement, etc. (Bond & Tinker, 1973; Connolly, 1971). In this formulation there is no investment in determining at which point the cycle begins. Rabinovitch (1959), for example, resolves the question nosologically by differentiating between "primary reading retardation" attributed to non-specific neurological disorganization, "secondary reading retardation" attributed to socio-emotional difficulties precluding emotional freedom to learn, and "brain injury with reading retardation" resultant from frank brain damage.

**Methodological difficulties.** Quite aside from the causality issue, inspection of the reading problem/emotional problem literature reveals great disparities in the operational definitions and idiosyncratic measures employed for such nebulous concepts as "emotional maladjustment," "psycho-social adjustment," "socio-emotional adjustment," and "reading-" or "learning-disabilities." This has posed obvious problems in pursuing consistent differences between groups of "normal" and "problem" readers along various dimensions of "adjustment," with the
result that the positive correlation between maladjustment and reading problems must be interpreted, at this point, to constitute more of a majority view than a set of unequivocal findings (Connolly, 1971).

Still another issue which comes into focus when inspecting these studies is the question of whether intrinsic characteristics, traits, or tendencies are being measured at all. With the exception of a few relatively recent studies (for example, Chronister [1964] and Zimmerman & Allebrand [1965] where the California Test of Personality and other assessment procedures were administered directly to groups of satisfactory and deficient readers) a preponderance of these studies appears to have relied upon clinician, parent, and/or teacher ratings of reading problem children's behaviour.

Social psychologists, and sociologists involved in the study of deviance have well documented and long acknowledged the fact that the process of labeling such concepts as deviance, propriety, and adjustment is affected not only by the characteristics of the one being labeled, but also by the characteristics, function, and expectations of the one who is doing the labeling. Given the notion that such subjective labeling or diagnosing is an interpersonal transaction, it would seem much closer to the data and more sound from an inferential point of view to interpret the foregoing literature as representing the perception by
others of learning- and reading-problem children. This being the case, there may be more to be gained from looking at the more systematic attempts at discerning specifically how these children are perceived by their teachers, peers, and parents.

**Teacher and Peer Perceptions of Learning-Disabled Children**

**Rating studies.** Myklebust, Boshes, Olson, and Cole (cited in Bryan & Bryan, 1975) presented the Pupil Behavior Rating Scale to classroom teachers and compared the ratings of diagnosed learning-disabled children with comparable nondisabled children. The results indicated that, as a group, the learning-disabled children were perceived as less competent in "auditory comprehension," "spoken language," "orientation (time concepts)" and "general coordination." Behaviourally, they were considered less: "cooperative," "attentive," "able to organize themselves," "able to cope with new situations," "socially acceptable to others," "accepting of responsibility," "able to complete assignments," and "tactful."

Although the purpose of this study was to investigate the viability of employing teacher ratings as an early detection device for educationally high-risk children, the results have interesting interpersonal implications when considered in light of the notion that responses to
these scales necessarily reflect not only the children's behaviour, but the teachers' perception of, and attitudes toward these children. The Mykelbust, et al., study was later replicated by Bryan and McGrady (1972) who considered the possible effects of teacher communication of these perceptions and expectations on achievement and behaviour—a point which will be discussed in a later section.

Koegh, Tchir, and Windeguth-Behn (1974) interviewed 49 Kindergarten and Grade I teachers from lower class and middle class schools asking for "descriptive labels" of learning-disabled and educable mentally retarded pupils. Analysis of responses to this open-ended task revealed that the retarded pupils were perceived as primarily having difficulty with school work and were described by generally positive remarks, while the learning-disabled youngsters were seen as predominantly having behaviour and personality problems and were described by generally negative and pejorative remarks. Taken together, these three studies would seem to indicate that the learning-disabled child is seen by the teacher as decidedly less desirable within the classroom than is the non-disabled child.

If this is how teachers perceive these children, one might wonder how they are seen by their peers. Bryan (1974b) administered sociometric scales to 62 third-
fourth-, and fifth-grade classes in each of which there was at least one diagnosed learning-disabled child. "Popularity" was measured by responses to the request that pupils name "three people: you want as friends; you would like to sit next to; you would like to invite to your birthday party." "Rejection" was inferred from asking for a listing of whom "you would least like: as a friend; to sit next to; and to invite to a birthday party." Analyzing these data by comparing the appearance of the learning-disabled child's name with that of a randomly selected peer of the same age, sex, and race, Bryan found that the learning-disabled child was significantly less popular and more rejected by his/her peers than the comparison child, both at the time of the original study, and at the time of a one year follow-up study. In addition, when pupils were asked to describe a group of classmates, one of whom was learning-disabled, this child was judged by his/her peers as being "worried and frightened"; "never appearing to have a good time"; "sad"; "not neat and clean"; "not very good looking"; and "someone to whom nobody pays attention."

Mussen, Conger, and Kagan (1974) summarize the available research concerning the influence of the school experience on a child's development as follows:

Beginning with kindergarten or first grade, the school becomes the center of the child's extra-familial life... The kinds of teachers he
has...will have important effects not only on his academic progress, but upon his general capacity to meet and master new problems and challenges, and consequently his self-confidence and self-esteem...

The child's contacts with his peers also expands greatly during the school years... The child whose school experiences and interactions with peers are constructive and rewarding and whose relationships with parents are favorable will develop a clearer self-image, increased competencies, and enhanced self-esteem. Unfavorable experiences in any of these areas are likely to limit the child's development of his potential and to foster crippling conflicts, anxieties, and impaired self-image. (pp. 524-525)

If this be the case, we might expect learning-disabled children, whatever difficulties they may bring into the classroom, to be potential candidates for any number of social and/or emotional difficulties that might arise from membership in a classroom social network where they are apparently seen and thought of in predominantly negative, pejorative, and rejecting terms. Given the methodological procedures employed in eliciting these perceptions of and attitudes toward the learning-disabled child, however, a logical and critical question which follows is whether these cognitive and conative positions are translated into actual behaviour by teachers and peers.

**Direct observational studies.** Direct observational analysis of classroom behaviour and interpersonal transactions has been carried out by Bryan and Wheeler (1972) and by Bryan (1974a), employing comparison pairs of
diagnosed learning-disabled youngsters and classmates matched for age, sex, and race. All pairs were in Grade 3. Quantitative analysis of emitted behaviour frequencies indicated that the learning-disabled children engaged in significantly less Task-Oriented-Behaviour (i.e., becoming engaged in purposeful activity prescribed by someone else: e.g., reading) than their comparison peers, while engaging in significantly more non-disruptive, Non-Task-Oriented-Behaviour (i.e., activities not assigned by the teacher: e.g., staring out the window or pretending to pay attention). Interpersonally, the groups did not differ in the proportion of time spent interacting with the teacher or with peers. There were, however, highly significant differences between groups in their patterns of interactions with teachers and with peers. In comparison to the non-disabled child, the diagnosed learning-disabled child: was the target of significantly less teacher- or peer-initiated interaction; was more frequently ignored by the teacher and peers when he/she initiated verbal interaction; and was the recipient of qualitatively different teacher-initiated interactions. Qualitative differences arose from the observation that the overt or implied communication that he/she was unable to perform a given task and required assistance was a significantly more frequent concomitant of the communications received by the learning-disabled child. Finally,
it was found that, although positive evaluative remarks from the teacher were evenly distributed between the two groups, the learning-disabled child received more negative communications than did the comparison child.

In summary, it appears that, aside from the social, emotional, or adjustmental difficulties that the learning-disabled or reading-problem children might actually experience, there is considerable evidence to support the notion that they are perceived and reacted to quite differently than non-disabled children by significant, extra-familial others. They are seen as less capable, less responsible, less tactful, less disciplined, less attractive, less friendly, and generally less competent and socially acceptable than are non-disabled children.

In addition, these children experience a quantifiably different social and communicational environment in the classroom. They are more likely to be left alone, ignored, rebuked, and derogated than their peers. So, not only do people tend to view the learning-disabled child as unlikeable, they also tend to act as if they do not like him. In view of the knowledge available concerning the effects of teachers' and peers' expectations on school children's behaviour and achievement (Rosenthal & Jacobson, 1968), one has to consider the possible influence of self-fulfilling prophecy and acquiescence to role attribution in the difficulties experienced and manifested by these
children in the classroom: In this regard, for example, Bryan (1974a, p. 42) suggests that the learning-disabled child may "learn how to look reasonably busy, not to be disruptive, to not get into trouble, to not work in school, and to have unusual relationships with teachers and peers."

Taken in isolation, the effects of these classroom phenomena on the learning-disabled or reading-problem child might be considered unfortunate, but not necessarily terribly powerful. The body of literature to be reviewed in the following sections, however, will indicate that the characteristics of the learning-disabled child's familial environment are often highly concordant with those of his classroom environment.

Parent Perceptions of Learning-Disabled Children

Surprisingly few empirical investigations of parental perceptions of their learning-disabled or reading-problem children are available in the literature, but the information that is presented reveals the same tendencies toward negative and pejorative views of these children which have been surveyed in the classroom.

Seigler and Gynther (1960), for example, note that parents of problem readers tend to use derogatory descriptive terms about their children and to devaluate their abilities more often than do parents of good readers.
They administered the Interpersonal Check List to parents of boys diagnosed as reading-disability cases and to parents whose children had no known academic difficulties. The reading-disability boys were described as more "aggressive," "distrustful" or "dependent," while the satisfactory readers were described more often as having "healthy, well-adjusted personalities."

Strag (1972) compared responses to a behaviour rating scale by parents of "normal learners," "learning-disabled" children, and "severely mentally-retarded" children. The learning-disabled children in this study had previously been diagnosed as having significant deficiencies in language skills, reading, spelling and/or arithmetic. In comparison to both the normal learners and the severely mentally-retarded, the learning-disabled children were described as significantly more "clinging" and less "able to receive affection." In comparison to normal learners only, the learning-disabled children were described as "less considerate of others," more "rigid," more "generally negativistic," and more "fatigueable."

As part of a larger study, Owen, Adams, Forrest, Stolz, and Fisher (1971) conducted interviews with the parents of 75 "educationally-handicapped" children and 75 "academically-satisfactory" children. The educationally-handicapped children in this study were defined as having a WISC Full Scale I.Q. of 90 or above while falling 1.5 -
2.0 years below grade level expectancy in WRAT reading and/or spelling. The groups were composed of pairs, matched according to sex, grade and I.Q. Analysis of the interview responses pertaining to 13 characteristics of the children revealed that, for every variable where a significant difference was found, the educationally-handicapped children were rated as having less acceptable characteristics than their matched controls. Parents of the educationally-handicapped children rated them as being "less persevering in school," "more anxious," "less able to structure their environment," and as possessing fewer "verbal abilities" (i.e., not liking to listen, being difficult to talk to, and having trouble expressing himself) than did parents of children who were achieving in a satisfactory manner. In addition, the investigation of parental attitudes toward the educationally-handicapped children revealed that they considered their children to have "more serious problems," reported being "more worried" about them, and indicated that they experienced "more annoyance" in response to them, than did parents of the non-handicapped children.

In the classroom, at home, and in the clinic, then, the "learning-disabled," "educationally-handicapped," or "reading-problem" child tends to be viewed quite negatively; this appears to be well established. He is perceived in this way by his teachers, his peers, his parents, and even,
in fact, by "blind" education-major raters who view him conversing with a normally-achieving peer on video-tape (Bryan & Bryan, 1975, pp. 121-122).

Taken as a whole, the literature reviewed to this point suggests the following: First, by no means do all learning-disabled children experience the negatively evaluative perceptions or personality-difficulty attributions enumerated above, but the learning-disabled child is decidedly much more likely to find himself the object of these perceptions and attributions than is the non-disabled child. Second, these labels and attributions are transitiutional. It is not only in the classroom that he is seen in this manner, but on the playground and at home as well. There is a consistency to his behaviour and interaction patterns which transcends the academic learning context, per se. Third, the negative attributions are not confined exclusively to his learning abilities. Bryan and Bryan (1975) summarize this point succinctly by asserting: "Learning disabled children do not suffer only from academic failure; many carry an additional burden of social failure" (p. 123). "The difficulty is not simply that such children are not reading, but that they are not pleasant" (p. 118).

Finally, the difficulties enumerated above are without consistent correlation with any specific type of learning disability and appear to apply to a broad range of
specific disabilities and etiological factors.

In response to these phenomena, and to the impression that the difficulties presented cannot be accounted for adequately in terms of a child's learning disability or classroom experience alone, some investigators have turned toward the exploration of these children's intrafamilial environments. One empirical strategy which has been commonly pursued toward this end has been to investigate the personality characteristics and child-rearing attitudes of parents with learning-disabled children. The search is for consistent differences and patterns of differences between these parents and parents of normally-achieving children. The preponderance of these data are derived from interviews and attitude survey instruments, and predominantly reflect mothers' attitudes and self-reported child-rearing practices.

The second major investigative strategy has arisen from the theoretical notion of viewing the nuclear family as a social system with its own characteristic attribution of, and acquiescence to, interdependent roles within the unit, and patterns of communication between members. The data are derived from direct observation of reading- or learning-problem families in interaction, and comparison of their communication patterns and interpersonal transactions with families whose members present no learning or reading difficulties. These studies will be dealt with in
a later section, after first presenting the available literature dealing with characteristics of learning- or reading-problem children's parents.

**Parent Characteristics**

**Rating studies.** In a relatively early investigation, Coleman, Bornston, and Fox (1958) administered the University of Southern California Parent Attitude Survey (PAS) to the parents of 20 reading-disability and 20 normally-achieving boys who were matched for age, I.Q., and "freedom from serious physical or emotional defects." The reading-disability boys fell 1-2 years below expected reading proficiency, in spite of normal intelligence. Of the four PAS scales ("Domineering," "Possessive," "Ignoring," "Total"), mothers of reading-disability boys were found to receive significantly higher scores than control mothers on only the "Domineering" and "Total" scales. There were no significant differences between reading-disability fathers and controls on any scale. In addition, demographic data which was obtained revealed a significant pattern of parental educational level. First of all, parents of normally-achieving boys had a higher educational level than parents of reading-disability boys. Secondly, within groups, only 10% of control mothers had achieved an educational level equal to or greater than their husband's, while in the reading-disability group, 50% of
the mothers had achieved equal or greater educational levels than those of their husband's.

This latter information might be construed as evidence for a genetic transmission hypothesis, but Coleman et al., approached their findings psychodynamically to proffer a formulation which suggests a familial "style" that might contribute to reading difficulties in boys:

The pressure of the domineering mother on her male child to develop "strength," often equating strength with educational achievement, coupled with a male parental model in the household who appears weak, possibly presents the male child with difficulties in making masculine identification. This problem is reflected in his approach to and feeling of inadequacy on the performance of educational tasks. (p. 50)

Coleman et al., appear to have traveled well beyond their data here, but subsequent studies have lent support to much of their speculation. For example, Owen et al., whose population and procedures have already been described, found that mothers of educationally-handicapped children (80% of whom were boys) differed significantly from mothers of normal achievers, both in exerting more "pressure for academic achievement" on these children, and in their tendencies to withhold "affectional warmth."

Goldman and Barclay (1974) administered the popular Parent Attitude Research Instrument (PARI) developed by Schaeffer and Bell (1958) to mothers of 29 boys and 9 girls with reading disabilities. The children had achieved "Average" or "Bright Normal" WISC Full Scale IQs and had
been diagnosed as reading-disabled by administration of an undisclosed section of the Gates tests. Unfortunately, the results were derived from comparison of PARI responses of the experimental group with the Zuckerman, Barret-Ribback, Monashkin, and Norton (1958) norms for the PARI in lieu of an appropriate control group. However, they did find significant deviation from the norms on 6 of the 23 PARI scales. Specifically, mothers of the reading-disability children were above the norm for "Strictness" and "Suppression of Sexuality," while falling below the norm for "Equalitarianism" (sic), "Comradeship and Sharing," "Encouraging Verbalization," and for "Approval of Activity."

The results were interpreted to indicate that the mothers of these reading-disabled children manifested tendencies to "discourage verbal fluency," to "minimize communication," and to provide "little opportunity for real give-and-take in their relationships with their children." They apparently had a need to control and direct their children's activity and curiosity in a restrictive manner, thereby infantilizing them and foster- ing a dependent, autocratic, directing relationship. Interestingly, although the mothers consistently maintained their domination across all scales, they also demonstrated great variability, approaching bimodality, in terms of a solicitousness-rejection dimension. That
is, they could either over- or under-reward their children—an intriguing phenomenon which is found in an earlier study (Wetter, 1972) where mothers of learning-disabled children differentiated themselves from control mothers by manifesting more "over-indulgence" as well as "rejection" on the Mother-Child-Relationship Evaluation. In short, the mothers described were domineering and aloof, with stringent expectations for their children's behaviour in a direction which Goldman and Barclay purport may be debilitating academically if aggressive, autonomous curiosity and exploration are prerequisites for school achievement.

This notion that parental suppression of a child's exploratory and aggressive activity is connected with reading problems is somewhat recurrent in the literature. It was alluded to early in this discussion in regard to the psychoanalytic formulations of Sylvester and Kunst (1943).

More recently, Grunebaum, Hurwitz, Prentice, and Sperry (1962) carried out extensive interviews with the parents of 18 boys with normal IQs who demonstrated at least a two-year-below-expected-grade-level deficiency in reading, spelling, or arithmetic. One of their many findings was that these parents were characterized by a confusion of "aggressive hostility" with "constructive aggression to achieve." This, in addition to the mothers'
tendencies for "dominating," "infantilizing," and "over-
protecting" their learning-disabled sons, was construed
as a possible etiological or contributing influence on
classroom achievement. This parental pattern is revealed
again in Brodie and Winterbottom's (1967) study of mothers
of learning-disabled vs. normally-achieving boys and, in
quite another context, by Sundstrom (1968). In this
investigation it was found that there was a significant
positive correlation between reading-disabled children's
progress in a remedial reading programme and mothers'
changes in ratings on the PARI of "Approval of Expressions
of Hostility."

There do appear, then, to be differences between
parents of learning- or reading-problem children and
parents of normal achievers, and some of these differences
appear to be rather consistent. Most notably, a "picture"
of the learning-problem child's mother emerges from this
attitude survey and interview research which characterizes
her as a domineering, directing, restricting, inconsistent,
perhaps rejecting, parent.

Direct-observational studies. The question of whether
parental self-reported characteristics are valid indicators
of observable interactional behaviour is dealt with by two
exceedingly well designed, direct-observational studies
by Bercovici and Feshbach, and Feshbach and Bercovici
In these studies, mothers of 40 first grade children were observed while instructing children on two visual-motor tasks (i.e., matching simple line-drawn faces; fitting pegs of different lengths into holes of different depths so that all pegs would be level across the top). The children were matched for sex and psychometric intelligence. Half of the mothers were mothers of reading-problem children (i.e., of at least average I.Q.: manifesting psychometrically-assessed and teacher-rated reading disability; without manifest neurological impairment), while the other half were mothers of satisfactory readers. The methodologically outstanding feature of these studies was introduced by having each mother instruct her own child, then two other children—one a problem reader, and the other a successful reader—in the same tasks. Finally, the Child Rearing Practices Report was administered to participating mothers.

Results of the behavioural observations revealed that reading-problem mothers did not differ from control mothers in frequencies of positive reinforcement. However, they did engage in significantly greater frequencies and proportions of punishment or negative responses. Further, the reading problem children's mothers were significantly more frequently punitive, regardless of whether they were instructing their own child, another reading-problem child, or a successful reader. In addition,
analyses of the reading-problem mothers' instructional behaviors revealed that they engaged in significantly more "controlling and directive statements," and were much more likely to "intervene verbally or manually" when the child made an error or encountered some difficulty. Finally, the results of the Child Rearing Practices Report revealed that reading-problem mothers' scores were more indicative of negative responding "styles" of child rearing and "punitive attitudes" than were those of control mothers': an indication that this characteristic generalizes to other situations beyond the laboratory.

**Fathers.** Although there is a substantial body of literature available concerning the learning-disabled or reading-problem child's mother, much less attention has been paid to his father. The only detailed description of these men are provided by Grunebaum et al., (1962) and by Miller and Westman (1964). Both of these teams of investigators provide independent substantiation for the "weak male parental model" speculated about by Coleman et al., (1958), and discussed above.

It should be noted, however, that these two investigations involved very selective and small samples of learning-problem and reading-disabled boys. The Grunebaum et al., sample was comprised of 18 boys who were screened for at least normal psychometric intelligence; were at least two years behind chronological age on one major
skill such as reading, spelling, or arithmetic, and at least one year behind in another skill as measured by the Metropolitan Achievement Tests; were screened for neurological and physical impairments; and had manifested no improvement after therapeutic intervention. Finally, there was no control group in this study. The Miller and Westman sample involved 18 boys within the normal range on nonverbal intelligence tests, were retarded at least two years in reading level, were lacking in visual or neurological pathology, manifested no significant psychopathology, and had not profited from intensive coaching in basic reading skills. There was, however, a matched control group studied for this latter investigation.

Given the limitations surrounding generalizability of the results of these two projects, the results were very similar. In spite of presenting a dominating, threatening, sometimes extremely powerful and punitive facade, these fathers were found to be fundamentally very passive, dependent, fearful men. Their self-perceptions were characterized by a lack of confidence, feelings of helplessness, and self-deprecation. These men felt thwarted in their educational and/or vocational aspirations, and many had not achieved the educational or occupational levels of which they were capable. Those who had done so tended either to see their realistic accomplishments as failures or to attribute them to luck. In addition, they
tended to withdraw from their families and to avoid extensive contact between their nuclear families and "outsiders," preferring to pursue solitary hobbies. Finally, their characteristic perception of their poorly achieving sons were very similar to their own self-perceptions, namely, as "unintelligent," "incompetent," and "troublesome." They tended to derogate, humiliate, and dominate their sons, and to be unable to take pleasure in their sons' accomplishments.

Both Grunebaum et al., and Miller and Westman move well beyond these data concerning characteristics of the learning- and reading-problem boys' parents to analyses of the characteristic patterns of interaction within the family unit. Before proceeding with these analyses, however, it seems advisable to present briefly the major theoretical assumptions involved in viewing the nuclear family as a social system.

The Family as a Social System

History. Historically, interest in the nuclear family as a social system arose from concurrent, yet relatively independent, developments in clinical practice and in theoretical/empirical endeavours concerning psychopathology. Within the clinical sphere, the mid-1950's were a time when psychoanalytic and psychodynamic notions and therapies were most prominent and most respectable in the helping
professions. As Haley (1971, p. 2) recounts this period:

An essential part of the medical model was the idea that a person could be changed if he were plucked out of this social situation and treated individually in a private office or inside a hospital. Once changed, he would return to his social milieu transformed because he had been "cleared" of the intrapsychic problems causing his difficulties. In this model, primary change was effected by providing the "patient" with insight into his unconscious conflicts, thus eliminating the repressive forces which were incapacitating him. The real world of the patient was considered secondary since what was important was his perception of it, his affect, his attitudes, the objects he had introjected, and the conflicts within him programmed by his past.

It was also a time, however, when psychotherapists found themselves struggling with a set of phenomena which led them to both reconsider the efficacy of the prevailing theoretical and therapeutic models, and to begin dealing with whole families.

Some therapists, for example, were simply disenchanted with the effectiveness of their traditional methods. They found "cured" patients returning quickly to hospital after being discharged to their families. In instances of the "cure" being maintained, therapists became aware of profound repercussions in the patient's family which, at times, resulted in the admission of another family member. Other therapists brought families into the treatment setting for the gathering of information otherwise unavailable and found themselves having to effect radical reformulations of their impressions of the patient when viewed in the context of his nuclear family.
For whatever reasons, "psychotherapists" such as Nathan Ackerman (1958), a psychoanalyst in New York, Boszormeni-Nagy and Frano (1965), in Philadelphia, MacGregor (1962) in Texas, Bowen (1966) in Maryland and others became "family therapists." They began seeing whole families as an appropriate and viable unit of pathology and treatment; they began to view the "patient" as the "identified patient" or "patient-designate" who was signalling a pathological family unit. Also, they went about attempting to evolve theoretical concepts to accommodate their revised notions of psychopathology and psychotherapy.

The scapegoat hypothesis. A major contribution which evolved from predominantly clinical concerns has been insight into the process involved in identifying a "patient." This has probably been discussed most explicitly by Vogel and Bell (1960) who, when reporting their investigations of families with a disturbed child, refer to him/her as the "family scapegoat." Vogel and Bell report that:

In all the disturbed families it was found that a particular child had become involved in tensions existing between the parents . . . [who] had developed an equilibrium in which they minimized contact with each other and minimized expressions of affect, particularly hostility, which they strongly felt for each other, and this made it possible for them to live with each other. But this equilibrium had many difficulties, the most serious of which was the scapegoating of a child. (p. 413)

Although the scapegoating process, particularly in families which present a "problem" child, has undergone
increasingly more complex and sophisticated theoretical discussions in the almost 20 years since first reported by members of this project (Spiegel, 1957), the fundamental dynamics involved have been repeatedly validated and widely accepted: viz., unresolved conflicts between spouses are too "hot" to handle via direct communication because of intense fears about the marital relationship and each other's response, so they are displaced onto the child. Vogel and Bell's observations are that:

- The tensions produced by unresolved conflicts were so severe that they could not be contained without some discharge. It is not surprising that some appropriate object was chosen to symbolize the conflicts and draw off the tension. (p. 415)

- The child is seen as an appropriate object because (1) he is dependent upon, and in a relatively powerless position compared to the parents; (2) his defenses are much weaker than his parents'; (3) his personality is still flexible and can be molded to acquiesce to the particular role the family ascribes to him; and (4) he is expendable (i.e., if he falters under the pressure, the family can get along without the task roles he usually performs).

- The selection of a particular child for the scapegoat role is seen as determined by predisposing factors in the child, such as physical or intellectual disability, and by the nature of the unresolved parental conflict.

- Who is selected as the scapegoat is intimately related to the sources of tension. Where value-orientation conflicts existed, the child chosen
was the one who best symbolized these conflicts. For example, if the conflicts revolved about achievement, a child who failed to achieve according to expectations could become the symbol of failure. (p. 416)

Finally, Vogel and Bell address the issue of maintaining the child in his role:

If the child is to be a "satisfactory scapegoat," he must carry out his role as a "problem child." The problem behaviour must be reinforced strongly enough so that it will continue in spite of the hostility and anxiety it produces in the child. This delicate balance is possible only because the parents have superior sanction power over the child, can define what he should or should not do, and control what he does or does not do. This balance necessarily requires a large amount of inconsistency in the ways parents handle the child.

The most common inconsistency was between the implicit and the explicit role induction. In all instances, while the parents explicitly criticized the child and at times even punished him, they supported in some way, usually implicitly, the persistence of the very behaviour which they criticized. (p. 420)

The presenting symptomatology of the individual or "problem child," then, is viewed, not as an idiosyncratic, intrapsychic complex of difficulties, rather it is understood in the context of the total pattern of relationships within the family unit.

The systems hypothesis. While the contribution to understanding why and how a particular problem child becomes and continues to be this way has come predominantly from clinicians, the comprehension of the family unit as a social system has been most profoundly influenced by a group of researchers (including Gregory Bateson, Donald
Jackson, Jay Haley, John Weakland and others) who collaborated under the auspices of the Schizophrenic Communication Research Project and Mental Research Institute in Palo Alto, California. The voluminous findings of these projects have been published in many sources over the past twenty years, but the most explicit and comprehensive summary of their work as it pertains to the present discussion is presented by Watzlawick, Beavin, and Jackson (1967, pp. 118-148).

The Palo Alto group, to begin with, views the nuclear family as a homeostatic, organismic interactional system. A "system," in general terms, is defined as:

A set of objects together with relationships between the objects and between their attributes, in which objects are the components or parts of the system, attributes are the properties of the objects, and relationships tie the system together. (p. 120)

In this regard, the family is seen as a "set" of members with characteristic ways of dealing with each other in that context and that are "tied together" by their relationships.

Secondly, the family system is an interactional one. Since the Palo Alto group subscribe to the notion that one cannot not communicate (i.e., that all behaviour is communicational), then the members of a family system must necessarily interact and communicate with each other simply by virtue of their being components of the system.

Third, the family interactional system is organismic or a whole, interdependent entity.
The behaviour of every individual within the family is related to and dependent upon the behaviour of all the others. All behaviour is communication and therefore influences and is influenced by others... changes for better or worse in the family member identified as the patient will usually have an effect on all other members, especially in terms of their own psychological, social or even physical health. (p. 135)

Further, a property of the family system's wholeness is the non-summativity of its parts. In interaction, its character is different than the combination of its parts.

Watzlawick et al., assert that:

The analysis of a family is not the sum of the analyses of its individual members. There are characteristics of the system, that is, interactional patterns, that transcend the qualities of individual members... "individual qualities" of members, especially symptomatic behaviour, are in fact particular to the system. (p. 136)

Finally, the organismic interactional family system is homeostatic. The system is in delicate balance and employs a negative feedback mechanism to maintain its balance. That is:

Inputs (actions of family members or of the environment) introduced into the family system are acted upon and modified by the system. (p. 139)

All families that stay together must be characterized by some degree of negative feedback, in order to withstand the stresses imposed by the environment and individual members. Disturbed families are particularly refractory to change and often demonstrate remarkable ability to maintain the status quo by predominantly negative feedback. (p. 146)

With these briefly presented, fundamental premises regarding the scapegoating process and the family and its processes conceptualized as a social system, we can now
turn to the literature pertaining to learning problems—specifically reading problems—as a condition of family homeostasis.

Reading Problems and Family Homeostasis

The project carried out by Miller and his associates (Miller & Westman, 1964, 1966; Westman, Miller, & Arthur, 1966) has already been discussed in terms of the paternal characteristics noted. A feature of the project which has not yet been discussed is the fact that these investigators gathered an extensive amount of data on the members of their reading-problem boys' families and on the interaction patterns of the family unit. The boys received physical and neurological examinations, a diagnostic interview, undisclosed reading tests, the Stanford-Binet or the Wechsler-Bellvue Scale, the Rorschach, and the Thematic Apperception Test or the Children's Apperception Test. The parents were each administered a questionnaire and checklist covering their history of the reading problem, reasons for seeking help, and descriptions of experiences with different members of the family ("to obtain their conscious version of events"). In addition, they were both administered the Thematic Apperception Test, an undisclosed "projective test of defense mechanisms," an unstructured interview, and a semi-structured interview about marital, parental, occupational, social, and homemaking activities ("to learn
about the parents' preconscious and unconscious conceptions"). Finally, the authors engaged the families in weekly psychotherapeutic sessions involving each child and his parents, and made periodic visits to the home and school.

In essence, Miller et al., found what they interpreted as the scapegoating pattern described by Vogel and Bell. The boys were described as: tending to withdraw from frustrating situations; being cautious, fearful, and conforming in their relationships with adults; being verbally self-demeaning; being powerfully passively-resistant; and as displaying a notable complacency about their symptom (i.e., being reluctant to "give it up").

Fathers of these boys have been described above. To reiterate briefly, they were outwardly dominating, threatening men, who nevertheless experienced an underlying lack of confidence and feelings of inadequacy, and were easily manipulated by their sons and wives. They tended to deny their difficulties, project their weaknesses onto other family members (particularly onto their sons), and to avoid family and social contacts which might interfere with their denials and projections.

Mothers were overtly submissive and deferent to their husbands, but were covertly aggressive, domineering women, who were characteristically non-nurturant and controlling of their sons. In short, Miller et al., saw in these reading-problem boys a scapegoated role of the "pseudo-
stupid" or infantile son who was ascribed and acquiesced to this role in the interests of maintaining the family's stability.

In these families, the parental conflicts surrounding the father's passivity and inadequacy vs. the mother's aggressive and domineering tendencies were too "hot" to handle directly, so were displaced onto and objectified in the person of a non-reading son. When gains were made in his reading ability, negative feedback mechanisms were activated within the family unit, and the investigators observed such system reactions as overtly reinforcing poor study habits, denial of concrete evidence of the son's intellectual potential, and emotional crises in other family members.

In addition to the above clinical data, Miller (Note 2) employed direct-observational procedures (including verbal achievement tasks and a non-verbal coalition game) to compare the reading-problem-family triads and the matched successfully-achieving-family triads along a variety of interactional/communicational dimensions. Compared with the successfully-achieving families, for example, it was found that the reading-problem families were characterized by the following: derogations of the sons' judgements, in lieu of direct discussion of parental conflicting judgements; parental communication of unrealistically high expectations for their sons' performance
on achievement tasks; continual remarks of an instructional (directing) and evaluative nature to sons while the boys were engaged in (and thereby deterring their achievement on) performance tasks; conflicting communications to the sons; ignoring and interrupting of the sons; maternal persistence eliciting both fathers' and sons' capitulation in decision-making tasks; radical fluctuations in achievement-task performance by sons in the presence of parental discussion of predicted performance; and system rigidity in the face of experimentally-induced failure.

In summary, Miller et al., interpreted their clinical and empirical findings as evidence for a "family scapegoat" paradigm of reading problems. However, they are vulnerable to the criticism of limited generalizability in view of their highly selective reading-problem group, the correlational nature of their studies, and the vast amount of data elicited from the single sample.

Peck (1970) and Peck and Stackhouse (1973) were much less stringent in their reading-problem group selection in investigating the decision-making processes of reading-problem- and normal-reading-family triads. In this study, 15 reading-problem families were selected on the basis of their son's having normal psychometric intelligence, having been through the normal sequence of educational events, being one year level behind expected reading proficiency on the Gates Reading Survey, and being one grade
level below expected proficiency according to the Bone and Tinker (1973) formula. These families were then matched with 15 control families for demographic variables.

Whereas Miller et al. were interested primarily in the scapegoating process, Peck was more concerned with the social system and homeostastic properties of families. He pursued the "disturbed communication" hypothesis in families where one child was an identified problem reader.

Assuming that "the family decision-making process is an effective medium for observing a family's communication behaviour" (p. 43), Peck had each family member fill out an opinion questionnaire privately, then brought the triad together and instructed them to "arrive at a mutually satisfying decision" for each of 20 items selected from the questionnaire. The items chosen were those on which there had been disagreement evident (although the family were not told this) in accordance with the Unrevealed Difference Technique (Winter & Ferreira, 1969), a popular interaction task employed in family dynamics research.

Peck found that the reading-problem families required significantly greater "decision time," engaged in more "silent time," and communicated more "irrelevant information" than did the normal-reading families. In this regard, the reading-problem families behaved in accord with the Family Pathology Cycle, which Winter and Ferreira had deduced empirically to explain reduced com-
munication effectiveness in problem families, and which had been shown to discriminate between groups of "neurotic," "delinquent," and "schizophrenic" families as well as between these and "normal" families in a series of studies. In addition to interpreting these results as evidence for the possibility that reading problems are a condition of family homeostasis, Peck also speculated about the operation of a scapegoating process in his family sample.

In another study involving the direct-observational investigation of family communication patterns, Campbell (1972) compared the families of 12 normally-achieving boys with the families of 11 boys who were "at least one year behind their age-level at school." The boys' psychometric IQs all fell within the Average or Bright Normal ranges, and the families were matched on demographic variables.

The parents in these triads were first administered four "Hypothetical Situations" (sic) individually, and were then brought together with their family, at which time the son was allowed to ask any questions he wished to get a fuller understanding of the situation. The parents were then asked to discuss among themselves and finally to explain the meaning of a proverb to their son. In comparison to the families of normally-achieving boys, Campbell found that the learning-problem boys' parents engaged in significantly more withholding and distortion of relevant information in communicating the previously
described Hypothetical Situations to their sons.

Beyond lending independent validation to Peck's information exchange results, the Campbell study provides behavioural support to the attitude survey literature already referred to, which indicates that mothers of learning-problem children are frequently revealed to be more secretive (i.e., withholding and distorting of information) than are mothers of normally-achieving children (Brodie & Winterbottom, 1967; Goldman & Barclay, 1974).

Summary

The literature reviewed to this point reveals relatively consistent evidence that: (1) peer, teacher, and parental perceptions of and attitudes towards "learning-disabled," "educationally-handicapped," and "reading-problem" children are more negative or undesirable than are those toward normally-achieving children; (2) teacher and peer behaviour toward these children is more negative and rejecting than it is toward normally-achieving children; (3) self-reports and independent observation of parental behaviour toward these children is consistently different in various negative and punitive directions than toward normally-achieving children; and (4) family units with these children have been observed to engage in more disruptive, less effective communication patterns than do family units with normally-achieving children.
The available evidence appears to support, at least inferentially, the possibility that reading problems can be thought of as being related to patterns of interaction within the nuclear family social system. In order to pursue this notion further, however, it would be necessary to substantiate the existence of intrafamilial differential interaction patterns. That is, it would have to be demonstrated that family members do, indeed, communicate different messages and/or communicate in a different manner when interacting with the learning-problem member than they do when interacting with his normally-achieving sibling. It was the principal purpose of the present study to investigate this phenomenon.

**Intrafamilial Differences**

The author is aware of only two prior investigations which deal with this issue. The first to be discussed is the Owen et al., (1971) monograph which has already been referred to in the section in which the literature involving parent perceptions of learning-disabled children was reviewed. It will be recalled that parent perceptions of "educationally-handicapped" children and of matched "satisfactorily-achieving" children were elicited by means of open-ended and structured interviews which were taped and subsequently coded by "blind" coders on the basis of predetermined variables. The results of these
procedures revealed that parents of educationally-handicapped children described them in consistently and significantly more negative and pejorative ways than did parents of the control children.

A second feature of this study, however, was the rigorous matching of siblings of the educationally-handicapped and satisfactorily-achieving target children. This allowed for intrafamilial comparisons of parental perceptions of their disabled vs. their nondisabled child. The Owen et al. findings in this analysis revealed that the differences which discriminated between perceptions by parents of handicapped children vs. parents of non-handicapped children held up, by and large, within families. In comparison to their satisfactorily-achieving child, parents perceived their educationally-handicapped child as having poorer "impulse control," as being "more anxious," as having less "ability to structure his environment," having "more serious problems," and as having less "verbal ability" (i.e., not liking to listen, being difficult to talk to, and having trouble expressing himself). In addition, these parents reported being "more worried about," and experiencing more "annoyance" in response to the handicapped child than the nonhandicapped sibling.

These findings provide some evidence for intrafamilial differential perceptions of and attitudes toward the learning-problem child as opposed to his/her sibling.
and can be construed as lending credence in an inferential manner to the possibility of differential interaction patterns within these families.

A direct-observational study which is relevant to the present are of investigation involved children with functional articulatory disorders rather than with learning disabilities as they have been considered in the present discussion. Kaplan (Note 1, 1970) observed the mothers of speech-impaired children interacting with their speech-impaired child and with this child's same-sex, speech-symptom-free sibling. These pairs were presented with a "non-goal oriented" interaction task (which had the mother simply encourage her child to play with a curiosity box) and with a "demand for achievement" task (which had the mother direct the child to complete successfully as many maze-like tasks as possible). The interactions were audiotaped and later scored by "blind" coders for frequencies of predetermined communication categories.

Kaplan's categories were very similar to those employed by Feshbach and Bercovici in the studies noted above. Her major dependent variables were "directive verbalizations" (e.g., demanding a task-oriented or mother-oriented response, or implying or giving a solution), "positive or rewarding verbalizations" (e.g., praising, rewarding, or approving), and "negative or re-
jecting verbalizations" (e.g., disapproving, devaluing, or implying inferiority or incompetence).

In essence, Kaplan's results were strikingly similar to Feshbach's. Whereas Feshbach found mothers of reading-problem children to deliver more directing/intrusive and negative communications than did mothers of normal readers, Kaplan found her mothers, in the "demand for achievement" condition, to be more "verbally active," more "directing" and more "verbally rejecting" toward the speech-impaired child than they were toward the speech-unimpaired sibling. Also, similar to Feshbach's finding that the reading-problem mothers did not differ from normally-achieving mothers in delivery of positive reinforcement, Kaplan found that her "positive or rewarding" variable did not differentiate between communications received by speech-impaired children and their siblings.

Beyond these results, however, Kaplan found an interesting interaction effect between the age and speech-problem variables in both the high-achievement and in the non-goal oriented tasks. When the speech-defective child was older than his unimpaired sibling, the incidence of more words, more direction, or more evaluative comment (pooled positive and negative communications) was close to random between speech-impaired children and unimpaired siblings. When the speech-impaired child was younger, however, there was a much greater incidence of these kinds
of verbalizations directed toward the defective, younger child than to the older, unimpaired child. This led Kaplan (1970) to conclude that "mothers treat the speech-problem children as younger, or less mature than their age position would indicate" (p. 204).

So, in the Kaplan study we have a second instance of processes found to differentiate between families of learning-problem vs. non-learning-problem children holding up when transposed to processes manifested within families of learning-problem children. In Kaplan's view, her results demonstrated:

A pattern of interaction between mothers and their speech-defective children which relates to the kind of personality patterns that can emerge in the child and the effect that these patterns may have on the meaning of the symptom in his total behaviour (i.e., the expectation of impairment). (1970), p. 205)

Similar to Kaplan's endeavour, the general intent of the present study was to investigate the intrafamilial processes of reading problem children in pursuit of the notion that patterns of interaction within this type of family may bear some relationship to the learning-problem child's reading difficulties; that is, that a child's reading problems may be related to the homeostatic equilibrium of his family social system, as manifested by the unit's communication patterns.

The study made no etiological assumptions in regard to the reading problems experienced and manifested by the children selected to participate. It was designed
simply to discover whether either or both parent(s) of
diagnosed reading-problem boys interact differently with
him than with his sibling who is not perceived as ex-
periencing school difficulties, when the focus of inter-
action is a non-reading achievement task.

The "picture" of the learning- and reading-problem
child which emerges from the literature concerning parental
perceptions of him appears to present a rather consistent
set of expectations (or role) of him. He is less capable,
less competent, less attentive, less autonomous, less
pleasant, and less likeable than normally-achieving
children in other families, and than his normally-achieving
sibling.

Reciprocally, the emergent picture of the learning-
problem child's mother is that she is more domineering,
more directing, more intrusive, more restricting, more
annoyed, more negatively evaluative, and more rejecting
than are the mothers of children in normally-achieving
families. The processes of role-ascription or scape-
goating would have us believe that within the family, the
mother is more like this with her reading-problem child
than with his brother, whom she perceives as adjusting
adequately in school. We know little of the fathers be-
yond their sharing the same perceptions of their children
as mother, so it would be expected that he would also join
mother in ascribing a role of incompetence and unaccept-
ability to his reading-problem child.

Hypotheses

Consequently, in the present study, it was expected to be demonstrated that, when placed in a situation which is clearly achievement-demanding for their children and while having their own roles only minimally structured, parents would interact differentially with their children.

(1) Parents were expected to communicate more expectations of incompetence, of inability to succeed autonomously, and of requiring assistance to their reading-problem son than to his normally-achieving sibling. This was expected to be reflected by (a) emitting more comments of a directive, intrusive nature when with their reading-problem child, by (b) emitting more comments which provided partial or complete task solutions for the reading-problem child, and by (c) manipulating the task materials more frequently when with the reading-problem child.

(2) Parents were expected to communicate more rejection, disaffection, and negative affect to their reading-problem child than to his normally-achieving sibling. This was expected to be reflected by (a) emitting more comments designating disagreement, scepticism, with-
holding, criticism, annoyance, and sarcasm when with their reading-problem child, and by (b) emitting more vocalizations accompanied by negative or unpleasant information when with the reading-problem child.

It was also expected that there would be differential communication of positive reinforcement and affect to the two sons, in spite of previous empirical evidence to the contrary. Kaplan (Note 1) suggests that her failure to find differences in communication of positive statements was due to the fact that her tasks did not elicit enough positive behaviour from the child and/or the possibility that mothers did not perceive any behaviours of their children as deserving of reward. In another discussion (Kaplan, 1970), she suggests that her mothers simply were "nonrewarding." Feshbach (1973) found "slight, non-significant differences between mothers of problem readers and mothers of successful readers in the mean frequencies of positive reinforcement" (p. 110).

It is the author's opinion that the above studies employed measures which were too insensitive to differentiate between types of positive communications, particularly in view of the fact that middle class parents will tend to make a great number of positive utterances (Hubbell, Byrne, & Stachowiak, 1974). The present study employed the use of two coding categories of verbal
positive remarks, ranging from a perfunctory "good" to an enthusiastic "wonderful." In addition, a nonverbal measure of affective communication and attraction was employed. In the present study, therefore, it was expected that differential positive communication by parents would be demonstrated.

(3) The parents were expected to communicate less acceptance, affection, and positive affect to the reading-problem child than to his normally-achieving sibling. This was expected to be reflected by (a) emitting fewer comments designating unsolicited praise, enthusiastic acknowledgement, or spontaneous encouragement and support (i.e., more active and enthusiastic positive comments) when with their reading-problem child, and by (b) emitting fewer vocalizations accompanied by a positive or pleasant intonation when with their reading-problem child.
CHAPTER II

METHOD

The general methodological considerations for the study were: (1) to identify intact, English-speaking nuclear families whose members included a reading-problem boy and a normally achieving male sibling, (2) to convene and present these family members with an achievement task which would generate a sample of their intrafamilial interaction patterns, (3) to classify their verbal and nonverbal communications along predetermined dimensions, and (4) to determine if there were any differences in the manner in which parents interacted with their reading-problem sons in comparison to their normally-achieving sons.

Subjects:

Perusal of approximately 2000 case records of children referred to the Neuropsychology Unit, Regional Children's Centre, Windsor Western Hospital Centre, resulted in an initial pool of approximately 42 families from which participating families could be selected. Of these 42 families, six could not be located, and five who were contacted were revealed to not be intact family units as a result of separation, divorce, psychiatric hospitalization, or removal of a child from the home. Of the remain-
ing 31 families, six were eliminated from the study when it was discovered upon closer inspection that the reading-problem boy's brother did not meet the criteria established for designation as a "normally-achieving" sibling. Finally, nine families who were contacted declined the invitation to participate in the project. All of this resulted in a total of 16 families who actually took part in the study.

The families. The 16 participating families were all intact nuclear family units which had been living together for at least two uninterrupted years. All families were English-speaking. Although one father's first language was Belgian, he had resided in Canada for approximately 20 years; had married an English-speaking Canadian; and reported that English was the only language spoken in the home, thereby appearing quite suitable for inclusion. With this singular exception all parents reported speaking English as their first language. No member of any participating family reported having been hospitalized for psychiatric treatment. All parents were the biological parents of the participating children.

Fourteen of the 16 families were Caucasian. One family was a Black family. A second family was the result of a bi-racial union; the father being Black, and the mother Caucasian. All participating families resided within the same 100-mile radius of southwestern Ontario; 13 in one of two urbanized areas; 3 in rural districts. Table 1 presents
Table 1
General Characteristics of the Participating Families

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father's Age&lt;sup&gt;a&lt;/sup&gt;</td>
<td>38.01</td>
<td>4.18</td>
</tr>
<tr>
<td>Mother's Age&lt;sup&gt;a&lt;/sup&gt;</td>
<td>36.18</td>
<td>2.83</td>
</tr>
<tr>
<td>Father's Education&lt;sup&gt;b&lt;/sup&gt;</td>
<td>11.38</td>
<td>1.93</td>
</tr>
<tr>
<td>Mother's Education&lt;sup&gt;b&lt;/sup&gt;</td>
<td>10.56</td>
<td>1.71</td>
</tr>
<tr>
<td>Father's Occupational Level</td>
<td>38.71</td>
<td>13.60</td>
</tr>
<tr>
<td>Number of Children</td>
<td>4.13</td>
<td>1.63</td>
</tr>
</tbody>
</table>

<sup>a</sup>years
<sup>b</sup>grades
a summary of the general characteristics of the families. Father's socio-economic-occupational level was defined by Blishen's (1968, pp. 741-753) "Socio-Economic Index for Occupations in Canada." The mean index rating of 38.7 in this sample was considered representative of the distribution of occupations within the general labour force of Ontario, $\chi^2(5) = 5.23$, n.s.. Two of the mothers were employed outside of the home on a regular basis. One of the mothers was employed on a full-time basis as a registered nurse; the other was employed on a part-time basis as a school bus driver. Three (19%) of the mothers had completed more years of formal education than had their husbands.

Reading-problem boys. All reading-problem boys (RPs) participating in this study were elementary school pupils who had been referred to and assessed by the Neuropsychology Unit, Windsor Western Hospital Centre. Referral had been precipitated by academic achievement difficulties and unresponsiveness to remedial attempts of sufficient degree to warrant school personnel's desire for an independent assessment and remedial programming suggestions. A comprehensive description of the assessment procedures employed can be found in Rourke (1975, 1976).

The "reading-problem" children in this study exhibited Wide Range Achievement Test (Jastak & Jastak, 1965) Reading performance centile scores between 2 and 27 ($M = 10.50$, $Mdn = 8.50$, $SD = 6.35$). Wechsler Intelligence
Scale for Children (Wechsler, 1949) Full Scale IQs were between 88 and 117 \( (M = 100.69, \text{Md}n = 96.80, SD = 6.90) \). Verbal IQs were between 79 and 110 \( (M = 94.31, \text{Md}n = 94.10, SD = 6.74) \), and Performance IQs were between 85 and 121 \( (M = 107.81, \text{Md}n = 109.20, SD = 10.62) \). As a group, then, all RPs fell roughly within the normal range of psychometric intelligence, while demonstrating an oral reading proficiency level roughly 2-4 years below expected grade level.

The age range for RPs was 115 - 161 months \( (M = 139.06, SD = 13.88) \) with an average age of approximately 11 years, 7 months. Their sibling positions ranged from 1 to 5 \( (\text{Md}n = 2.25) \). One of the RPs had been placed in a Specific Learning Disability class prior to his neuropsychological assessment.

None of the RPs manifested sensory-acuity or gross neurological dysfunction. No RP manifested notable "behavioural disorders" or ontoward psychiatric symptomatology. None of the RPs could be considered "culturally deprived." All had experienced adequate, continuous, formal instruction throughout their educational careers.

**Normally-achieving siblings.** From each participating family unit, one normally-achieving male sibling (NA) was chosen by the experimenter for inclusion in the study. In each case, the NA was chosen such that he was (a) a natural sibling of the RP, (b) free of any manifestations of sensory,
neurological, behavioural or emotional difficulties, (c) was an elementary school pupil, and (d) had experienced the usual course of continuous formal instruction throughout his school career. In addition, the NA was selected on the basis of the following three criteria pertaining specifically to his school achievement and adjustment. First, the parents reported verbally, upon initial contact, that they perceived him as having "no learning or discipline problems in school." Second, the parents rated the NAs' "School Adjustment" on the Child Behaviour Rating Scale (Cassel, 1962) presented in Appendix A. These ratings resulted in higher raw scores for the NA in comparison to his RP sibling in all but one case in which the scores were equal. Further, a comparison of the groups by a single factor, within-subject ANOVA revealed that the "School Adjustment" scores of NAs were significantly higher than those of their RP siblings. \( t (1,15) = 43.85, p < .01. \) Third, teachers' evaluations of the NAs' reading and/or language achievement were inspected. Final report card grades and comments for the just-completed academic year (subjects were convened throughout the summer months of 1976) revealed that no NAs had received less than an average or satisfactory grade in the pertinent area.

The ages of NAs ranged from 63 to 178 months \( (M = 133.56, SD = 30.02) \) with an average age of approximately 11 years, 7 months. Thus, the mean ages of the RP and NA
groups did not differ significantly, although the age variation was considerably more for NAs than for RPs. Their sibling positions ranged from 1 to 6 (Md = 2.33).

**Sibling position.** In half the families participating in the study the NA was older (NA-O) than the RP (RP-Y). In the other half of the sample, the NA was younger (NA-Y) than his RP sibling (RP-O). Although it had been considered ideal to choose the NA closest in age to the RP in a family unit, this was not always the case in actuality, in the interest of preserving the NA-O vs. NA-Y balance. Table 2 summarizes the mean ages of the various reading-ability, and birth-order (Read x BO) subgroupings.

A two-factor (Read x Birth Order) ANOVA revealed the following: (a) no significant age difference between the RP and NA groups, F (1,28) = .77, n.s., (b) a significant age difference between Older children and Younger children, F (1,28 = 14.67, p < .01; and, (c) a significant Read x Birth Order interaction, F (1,28) = 9.56, p < .01. The interaction effect resulted from the fact that NA-Ys were significantly younger than all other groups (i.e., RP-O, RP-Y, NA-O), whereas the RP-Os, RP-Ys, and NA-Os did not differ statistically.

**Contact Procedure**

The families were initially contacted by a letter bearing Windsor Western Hospital Centre letterhead
Table 2
Mean Ages and SDs (in months) for Read x Birth Order Subgroupings

<table>
<thead>
<tr>
<th>Group</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>RP</td>
<td>139.06</td>
<td>13.88</td>
</tr>
<tr>
<td>NA</td>
<td>133.56</td>
<td>30.02</td>
</tr>
<tr>
<td>Older</td>
<td>148.31</td>
<td>16.93</td>
</tr>
<tr>
<td>Younger</td>
<td>124.31</td>
<td>22.71</td>
</tr>
<tr>
<td>RP-O</td>
<td>141.38</td>
<td>14.65</td>
</tr>
<tr>
<td>RP-Y</td>
<td>136.75</td>
<td>13.65</td>
</tr>
<tr>
<td>NA-O</td>
<td>155.25</td>
<td>17.03</td>
</tr>
<tr>
<td>NA-Y</td>
<td>111.88</td>
<td>23.79</td>
</tr>
</tbody>
</table>
(Appendix B). The letter indicated that their names had been obtained from the files at the Neuropsychology Unit, that the purpose of the research project was concerned with looking more closely at the reading process to discover how children in the same family learn new skills such as reading in their own individual ways; and announced that they would be contacted shortly by telephone.

Within one to three weeks subsequent to the mailing, the experimenter contacted the families by telephone. At that time he explained the general nature of the study in terms of investigating the idiosyncratic ways in which siblings acquire new learning skills, requested the family's participation, and made an appointment with those families which agreed to participate.

Families which agreed to participate were immediately sent a letter confirming the appointment, specifying the two siblings who would be involved and giving directions to the location of the study (Appendix C). In addition, the family was contacted by phone within 24 hours of their appointment time to confirm their attendance. None of the 16 families which agreed to participate failed to attend their appointment.

**Apparatus**

A Sony AVC-3260 DX videocamera and AV-3600 videorecorder were used to videorecord the family interaction task. No
special lighting considerations were required for the taping. A Sony CVM-110 U transistor monitor was employed for playback, which provided adequate video and audio fidelity for the purposes of the study. In addition, a Krohn-Hite Model 3750 filter was employed for the low-pass filtering of the audio portion of the tapes for one dependent measure. These filtered tapes were re-recorded onto a Sony TC 270 stereo taperecorder.

**Experimental Procedure**

*Location and physical setting.* All families were seen in the Speech and Hearing Department, Windsor Western Hospital Centre.

The procedure required the use of three adjacent interconnecting rooms. One room was equipped with a one-way mirror and was used for the experimental task. It contained a large table at which the family members sat side-by-side (Parent-Child-Parent) and performed the experimental task while facing the mirror. A single floor-stand microphone was placed in the middle of the table at approximately table-height.

A small adjacent observation room equipped with the same one-way mirror was used to house the recording equipment (except for the microphone). The experimenter remained in the observation room to monitor the recording procedure and to make informal observations of each
family's interaction throughout the experimental task performance.

A third, larger room, furnished with comfortable arm chairs and a sofa was used for pre-experimental task discussion with the family and as a waiting area for the sibling who was to take his turn at the experimental task.

**Experimental task.** Upon their arrival, the family was led to the "waiting room" where a brief, general discussion of the procedure took place, and where they were requested to sign a consent form (Appendix D) covering releases of information, agreement to participate, and consent for videotaping. No family expressed any concern about or reluctance to the signing of the consent form.

Following this, the parents and one son were brought into the experimental room and were seated at a table so that the child sat between the parents in all triads. On the table before them were the task materials and a typed copy of the instructions.

The interaction task was centered around performance of the Wechsler Adult Intelligence Scale, Block Design Test (Wechsler, 1955) employing blocks designed for use in the Wechsler Intelligence Scale for Children (Wechsler, 1949). The task material was composed of nine multicoloured blocks, all of which were identical, and a booklet containing ten pages of designs. The designs were graduated in complexity and could be reconstructed by
appropriate placement of either four or nine blocks.

The Block Design Test was chosen as an interaction task because it represented an achievement task for the children which required attention, concentration, persistence, and a degree of frustration-tolerance, yet it did not require predominantly reading- or language-related skills, per se (Lovell, Gray, & Oliver, 1964). The WAIS Block Design was chosen to control for practice effects among the RPs who had already experienced the WISC Block Design by virtue of their neuropsychological assessment. Finally, it had been determined in a previous pilot project that the task would generate a sufficient amount of verbal and nonverbal interaction for the purposes of the study.

Instructions were read to the Mother-Father-Child triad as follows:

Here are nine blocks which are all exactly alike, and a ten-page booklet with a numbered design on each page. If the blocks are put together correctly, they will reproduce, exactly, the designs on the booklet pages.

Your son's job here is to learn to put the blocks together so that the top surface is exactly like the design in the booklet. Your jobs are to have your son learn to do this as well as he can, to decide if and when each design is completed correctly, and to mix up the blocks after each design is completed.

There are ten designs in the booklet numbered 1-10. Please do one at a time beginning with #1 until you have completed all ten. Please do them in order and do not skip any.

Speed is not important in this exercise, nor is the number that you are able to complete. Take your time and have your son do as many as he can.
I'll be behind the one-way mirror observing you, and I'll come back either when you have done all ten or when a reasonable length of time for the purposes of the study has passed.

Are there any questions? ... If not, I'll go into the observation room and signal you when to begin. Please wait for my signal.

When the instructions had been read, the experimenter placed the copy on the table, entered the observation room, activated the recording equipment, and signaled the family to begin.

Upon noting that the child had completed all designs, or when 15 minutes had passed, the experimenter re-entered the experimental room, asked the child to switch places with his brother in the waiting room, and repeated the same procedures.

Since there were two subgroups of families in regard to reading ability and sibling position (i.e., Reading Problem-Older; Reading Problem-Younger), the order of participation was counter-balanced within each group. That is, for half the Reading Problem-Older group the RP participated first and for the other half the NA sibling participated first. The same procedure was effected for the Reading Problem-Younger group.

When the second child had completed the designs or had reached the 15-minute limit he was asked to join his brother in the waiting room. The parents were then presented with two Child Behaviour Rating Scale(s) and were instructed to complete them together for one child at a
time, in the same order in which their children had
participated in the interaction tasks. The instructions
were given as follows:

Here are the rating scales I told you about before
we began. I would like you to fill them out together,
doing the first one for (son's name), then the second
one for ________.

You should read each item carefully and then
place a check mark in the appropriate place where
you believe ________ belongs for the specific item
involved. If the item is 'yes' for the child, put a
check mark on the 'yes.' If the item is 'no,' put a
check mark on the 'no.' If the answer is somewhere
in-between the yes and no, put a check mark on the
four point scale indicating where the item is most
true. Let's look at the example.

Are there any questions? If not I'll leave you.
I'll not be observing or taping you doing this, so
when you are finished just come to the waiting room
and let us know. Please remember to do ________
first and then ________. And please remember to do
every item even if it doesn't seem appropriate to you.

While the parents were doing this the experimenter sat
with the boys and discussed their impressions of the study.
This discussion also took place with the parents when they
had finished.

Finally, the experimenter thanked the participants and
offered to either contact them by phone or letter to in-
form them of the precise nature of the study as well as to
report the results.

Measures

The verbal and nonverbal communication categories,
examples, and scoring procedures designed for the study.
are presented in the "Code Book" (Appendix E). The foremost concern and focus of attention in all coding was the child as recipient of parental communication. Although the child's communications had to be taken into consideration in order to appropriately score various coding subcategories, the operational definition for communications received by the child took the form of attending to and scoring those parental communications which were: (a) emitted in the presence of the child, and (b) not obviously directed away from the child.

**Verbal category code.** The verbal category codes were essentially compilations of verbal categories employed by Bales (1951), Bishop (1951), and Moustakas, Sigel, and Schalock (1956), modified and supplemented for this study's unique interaction context.

The code permitted scoring of: (a) which parent was speaking, (b) three subcategories of "Direction" comments, (c) two subcategories of "Positive" comments, and (d) two subcategories of "Negative" comments.

The "Direction" subcategories were graduated in terms of the degree of parental intrusiveness manifested, or the degree of autonomy taken away from the child in his performance of the achievement task. The dimensions along which the degree of intrusiveness was decided upon entailed (a) the amount of specific task solution information which was provided by a comment, and (b) the degree of
choice which was left with the child to go about the task solution in his idiosyncratic, independent manner.

Although the "Direction" subcategories were coded predominantly on the basis of the verbal content of any given comment, it was found that accuracy of coding was greatly enhanced by taking nonverbal concomitants (e.g., pointing; touching) of the verbalizations into consideration. As a result, these subcategories were coded while employing both the audio and visual portions of the recordings.

The two "Positive" subcategories were graduated in terms of degree on the basis of three dimensions, as follows: (a) word value of the verbal comment (e.g., "O.K." vs. "wonderful"; "good" vs. "great"), (b) the notation of whether or not the comment had been solicited by the child (the assumption was made that the "positiveness" of comments which are emitted spontaneously is greater than those which have to be requested by the child), and (c) the paralinguistic, affective loading of the comment (i.e., the enthusiasm, energy, or exclamation with which the verbalization was emitted). As a result, coding decisions again were based predominantly, but not purely, upon the verbal context of a comment, since the child's communications and paralinguistic factors also received some consideration.

Finally, the two "Negative" subcategories were graduated in degree on the basis of the same three dimensions as the "Positive" subcategories (i.e., word value; spontaneity;
paralinguistic affect).

It might be noted that for each of the three main categories, an additional subcategory had originally been designed as a more extreme example of the category. These were excluded from the study, however, when it was discovered that they either did not occur at all, or occurred only with minimal frequency.

**Nonverbal category code.** The nonverbal category codes employed in the study included "Touching" and "Pointing"; two purely nonverbal indicators of parental intrusiveness, and "Intonation"; a paralinguistic indicator of affect.

"Touching" was scored when the parent(s) touched either the blocks or the child's hand(s), to either impose a block manipulation on him or to stop his ongoing activity. Both of these behaviours were assumed to constitute major intrusions upon the child's autonomous performance of the achievement task.

"Pointing" was scored when the parent(s) pointed either to the blocks or to the design booklet. These behaviours were assumed to be lesser intrusions upon the child's autonomous functioning. They were assumed to serve the functions of instructing, orienting, and attention-directing, while leaving the child with considerably more choice in his task performance than "Touching."

Both "Touching" and "Pointing" were purely nonverbal in nature and were scored solely on the basis of video-playback
of the recordings.

"Intonation" was scored as positive, neutral, or negative, along a composite of "pleasant-unpleasant," "enthusiasm-disappointment," and "reward-punitiveness" dimensions. It has generally been found that tone-of-voice provides a valid and reliable indicator of transitory emotional states, quite independent of verbal syntax or context (Davitz & Davitz, 1961; Kramer, 1964; Levy, 1964, chapter 8; Weitz, 1974, pp. 93-98). In this regard, "paralinguistic" (Trager, 1958) concomitants of vocally-expressed affect such as pitch, tempo, timbre, and rhythm have been found to be amenable to accurate decoding, without reference to verbal context (Davitz & Davitz, 1959; Milmoe, Novey, Kagan, & Rosenthal, 1968).

In the present study, it was felt that context-free evaluation of parental vocal communication could provide informative data regarding their affective experiences throughout the experimental task with their two sons. As a result, an electronic content-filtering technique designed by Starkweather (1956) and employed by many others (e.g., Duncan, Rice, & Butler, 1968; Mehrabian, 1972; Rogers, Scherer, & Rosenthal, 1971; Soskin & Kaufman, 1961) was attempted.

The audio portion of the videotapes was retaped onto audiotape while being passed through a commercial bandpass filter so that voice frequencies above 320-400 cps. were
removed. The filtered product rendered the speech samples' content largely unintelligible and sounding like "a kind of mumble as though heard through a wall" (Starkweather, 1956). The audiotapes for each family were then scored as positive, neutral, or negative as they occurred.

**Scoring Procedure**

**Time standardization.** It was originally assumed that each Mother-Father-Child triad would require approximately 15 to 30 minutes to accomplish the experimental task, and that the first 15 minutes of each tape would provide a more than adequate sampling of the triad's interaction processes for coding purposes. This was borne out in the pilot study, but not in all of the subsequent tapings. Although 12 of the 16 (75%) participating families required at least 15 minutes for each triad to complete the task, four families had at least one son who completed the task in less than 15 minutes. The times required by these four boys were: 7.75 minutes, 8.00 minutes, 11.58 minutes, and 12.50 minutes.

In order to insure standardization of the experimental procedures, all tapes were timed so that the times of interaction coded were equal for both Mother-Father-Child triads in a given family unit. As a result, the times of interactions for 24 triads were the first 15 minutes, while the times for the remaining eight triads were the shorter
of the two times the triads in each of these family units took to complete the task.

Observation. Each videotape recording presented the two triads for a family unit in the same order as the experimental-task-performance ordering. The sequence of videotape observation which was decided upon was as follows: (a) mother in the first triad, (b) mother in the second triad, (c) father in the first triad, (d) father in the second triad.

The decision to selectively observe one parent at a time was based on the coders' experience that attempting to observe, comprehend, and score the verbalizations or nonverbal behaviour of the two parents—often speaking or acting simultaneously—greatly debilitated the coders' accuracy. The decision to observe the same parent in his/her two successive triads resulted from the recognition that accuracy of coding increased considerably as the coder(s) became acclimated to one parent's idiosyncratic behaviour pattern. This was particularly evident when scoring the verbal categories, because the coder was allowed to become accustomed to each parent's unique pattern of frequency and intensity of verbalizations and his/her unique articulation and use of colloquialisms. Selectively observing first one parent in two triads and then the other greatly facilitated this acclimatization process.
Coding. The dependent measures reflected cumulative frequencies of each codeable verbalization, vocalization, and nonverbal behaviour for each parent, in each triad.

Coding of the three "Direction" subcategories was done one category at a time. That is, the coder(s) played each tape twice (i.e., once for mother and once for father) while selectively noting the occurrence of verbalizations meeting the criteria for inclusion in the first subcategory. When this was accomplished for all tapes, the procedure began anew for the second subcategory, and finally for the third subcategory.

This procedure was altered somewhat in the interest of time, tedium, and efficiency, for the "Positive" subcategories, the "Negative" subcategories, the "Touching/Pointing" subcategories, and the "Intonation" subcategories. The coding of these measures was done by scoring all subcategories of a given major category at the same time when it was discovered that this could be accomplished without sacrificing accuracy. The procedure was not otherwise modified from that presented above.

In all, each of the 16 tapes was played a total of 14 times, for a total of 224 replays. Since it characteristic-ally required approximately 1.5-2.0 hours to complete the coding for each category, the entire coding procedure required approximately 400-450 hours to accomplish, excluding the time involved in the training of reliability
judges and their coding time.

**Prorating.** As was noted above, four of the participating triads required less than 15 minutes to complete the experimental task, with the result that their comparison triad was observed and scored for the same amount of time. This was considered essential in view of the study's primary concern with comparing the communications of one parental pair in the presence of their other son. On the other hand, this presented the problems of deviating from the 15 minute standardization between cells, as well as the possibility of spuriously low scores being distributed throughout three of the four Read x Birth Order x Test Order cells (i.e., one each in the RP-O-RP1st and the RP-Y-RP2nd cells, and two in the RP-O-RP2nd cell). As a result, it was decided to prorate scores for these four families on the basis of a 15-minute sample. The derived scores for these families were prorated by the formula: Prorated Score = Raw Score x 15 minutes
actual time.

**Interjudge Reliability**

**Training.** The training of each single or double category required two sessions, each of approximately three hour's duration. During the first sitting, the author and the coder would: (a) discuss the general coding considerations and procedures, (b) read and discuss the category criteria as presented in the Code Book, and (c) observe
training tapes while discussing the general procedures as well as the inclusion/exclusion of specific verbalizations or behaviours. The training tapes were tapes of families who had been excluded from the study when it was discovered that the NA sibling did not qualify for participation.

The second sitting involved: (a) the more independent, simultaneous coding of training tapes by the author and coder, (b) discussion of coding disagreements, and (c) clarification and sharpening of the category criteria wherever significant confusion or ambiguity was detected. It was characteristic of this second session that the author and coder would reach nearly 100% agreement for their respective codings of any given category.

**Reliability codes.** A total of four independent coders (paid at an hourly rate) were employed for the study. One coder was trained in the three "Direction" and the two "Positive" subcategories, one coder was trained in the two "Negative" subcategories, a third coder learned the "Touching" and "Pointing" categories, and the fourth coder coded the "Intonation" subcategories.

Time and financial considerations dictated that the author be the primary coder of the seven verbal-code subcategories, while the two other coders acted as reliability judges. The author acted as reliability judge rather than primary coder for the nonverbal subcategories.
Although the author was by no means "blind" in terms of the purposes of the study, he was not aware of the designated RP- or NA-sibling throughout his coding. Triads were identified only by subject number and either "O" or "Y" for the sibling designation. The four independent coders and reliability judges were kept unaware of the specific nature of the study, as well as the designated RP- or NA-sibling.

**Sampling procedures.** Four randomly selected tapes were coded for the first subcategory (i.e., Solving), which was scored yielding a total of 16 pairs of raw scores for comparison (i.e., 4 tapes x 2 triads x 2 parents). Time and financial considerations resulted in an interest in shortening this process, so subsequent reliability coefficients were based on the comparison of eight pairs of raw scores derived from randomly selecting only two tapes for each subcategory. Calculation of the Spearman-Brown formula using n/2 resulted in an estimated potential decrease in reliability (for the Solving category) from .95 to .91, which was considered a satisfactory level for the purposes of the study. In addition, it was thought that the validity of the measures would undergo only minor modification (Cronbach, 1960, pp. 130-132).

**Simultaneous coding.** Simultaneous, independent coding was decided upon for all verbal category codes when it became evident that confounding error was introduced by the mechanical distortion of, and insensitivity to, some
verbalizations. It was felt that the reliability coefficients which would be derived should reflect, as much as possible, the strength and viability of the category criteria rather than the technical proficiency of the recording system or the coders' respective auditory acuity. As a result, it was considered appropriate to allow discussion of, and agreement upon, the specific content of ambiguous or barely audible verbalizations.

In these cases the coders listened to a verbalization for a maximum of three times, and either agreed upon the content or agreed that it was incomprehensible. Obviously, the actual scoring of these verbalizations was not discussed, and scoring was silent.

Reliability coding for "Touching," "Pointing," and the "Intonation" subcategories was completely independent.

Reliability analysis. For each verbal and nonverbal subcategory the Pearson product-moment correlation coefficient (r), and the coefficient of alienation (k) discussed by Guilford (1956, pp. 374-377) was computed. A summary of these analyses is presented in Table 3.
Table 3

Interjudge Reliabilities (r) and Coefficients of Alienation (k) for Verbal and Nonverbal Coding Categories (n = 8)

<table>
<thead>
<tr>
<th>Category</th>
<th>r</th>
<th>k</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Direction</td>
<td>.99**</td>
<td>.06</td>
</tr>
<tr>
<td>Hint/Clue</td>
<td>.99**</td>
<td>.05</td>
</tr>
<tr>
<td>Solving$^a$</td>
<td>.95**</td>
<td>.30</td>
</tr>
<tr>
<td><strong>Positive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>.99**</td>
<td>.10</td>
</tr>
<tr>
<td>Passive</td>
<td>.99**</td>
<td>.10</td>
</tr>
<tr>
<td><strong>Negative</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>.98**</td>
<td>.15</td>
</tr>
<tr>
<td>Passive</td>
<td>.94**</td>
<td>.32</td>
</tr>
<tr>
<td><strong>Hand Gestures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touching</td>
<td>.99**</td>
<td>.11</td>
</tr>
<tr>
<td>Pointing</td>
<td>.99**</td>
<td>.13</td>
</tr>
<tr>
<td><strong>Intonation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>.93**</td>
<td>.37</td>
</tr>
<tr>
<td>Neutral</td>
<td>.90**</td>
<td>.44</td>
</tr>
<tr>
<td>Negative</td>
<td>.78*</td>
<td>.63</td>
</tr>
</tbody>
</table>

$^a_n = 16$

*p < .05

**p < .01
CHAPTER III

RESULTS

The principal purpose of this study was to discern whether either or both parent(s) of a diagnosed reading-problem (RP) boy would interact differently with him than with his normally-achieving (NA) sibling, when the focus of interaction was a non-reading achievement task. In this regard, the subjects were the parents and the presence of the RPs or the NAs constituted the contrasting conditions of their parents' experimental tasks. The dependent variables were three major categories of verbal communication, each with more specific subcategories (i.e., Total Direction = General Direction + Hint/Clue + Solving; Total Positive = Active + Passive; Total Negative = Active + Passive), one major nonverbal category, with two specific categories (i.e., Hand Gestures = Touching + Pointing), and one major vocal category, with three subcategories (i.e., Intonation = Positive + Neutral + Negative).

Although the major concern of the study was with the differential communication by both and each parent(s) (i.e., Parents [Parent] = Mother [M] or Father [F]) in relationship to their children's reading ability (i.e., reading ability [Read] = RP or NA) as the most influential characteristic of the boys, previous research and general
knowledge dictated that two other factors be considered in the analyses. These were a boy's birth order in relationship to his sibling (i.e., birth order \([BO] = \text{RP-O or RP-Y}\)), and the testing order in which he was presented to his parents for performance of the experimental task (i.e., testing order \([TO] = \text{RP-1 or RP-2}\)).

The major statistical analyses performed in the study considered the communications of each parent together, with each of their two sons, for each of the dependent variables. This was accomplished by four-factor \((BO \times TO \times \text{Read} \times \text{Parent})\) analyses of variance, with two levels of each factor. Both Read and Parent were considered repeated measures in these analyses. The analysis of variance for both parents' Total Verbalization is presented in Table 4 as an example of these analyses.

Since the literature provided little precedent with respect to the present methodological design, particularly regarding the study of both mothers and fathers together, it was thought that analyses of the data for mothers and for fathers separately would be of value. This was accomplished by three-factor \((BO \times TO \times \text{Read})\) analyses of variance, with Read as the repeated measure. The analysis of variance for Mothers' Total Verbalization is presented in Table 5 as an example of this type of analysis.

All statistical models were constructed according to Winer (1962, pp. 319-348). The Statistical Analysis System
Table 4

Birth Order (BO) x Testing Order (TO) x Reading Ability (Read) x Parents (Parent) Analysis of Variance for Both Parents' Total Verbalization Scores (n = 64)

<table>
<thead>
<tr>
<th>Source</th>
<th>A SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>BO</td>
<td>12939.06</td>
<td>1</td>
<td>12939.06</td>
<td>1.38</td>
</tr>
<tr>
<td>TO</td>
<td>27972.56</td>
<td>1</td>
<td>27972.56</td>
<td>2.93</td>
</tr>
<tr>
<td>BO x TO</td>
<td>1139.06</td>
<td>1</td>
<td>1139.06</td>
<td>.12</td>
</tr>
<tr>
<td>Subj. w. groups [error (between)]</td>
<td>114404.75</td>
<td>12</td>
<td>9533.73</td>
<td>-</td>
</tr>
<tr>
<td>Read</td>
<td>2862.25</td>
<td>1</td>
<td>2862.25</td>
<td>2.00</td>
</tr>
<tr>
<td>BO x Read</td>
<td>3422.25</td>
<td>1</td>
<td>3422.25</td>
<td>2.36</td>
</tr>
<tr>
<td>BO x TO x Read</td>
<td>324.00</td>
<td>1</td>
<td>324.00</td>
<td>.41</td>
</tr>
<tr>
<td>Read x Subj. w. groups [error (within)]</td>
<td>17371.75</td>
<td>12</td>
<td>1447.65</td>
<td>-</td>
</tr>
<tr>
<td>Parent</td>
<td>2678.06</td>
<td>1</td>
<td>2678.06</td>
<td>.41</td>
</tr>
<tr>
<td>BO x Parent</td>
<td>4522.56</td>
<td>1</td>
<td>4522.56</td>
<td>.70</td>
</tr>
<tr>
<td>TO x Parent</td>
<td>8883.06</td>
<td>1</td>
<td>8883.06</td>
<td>1.37</td>
</tr>
<tr>
<td>BO x TO x Parent</td>
<td>4064.06</td>
<td>1</td>
<td>4064.06</td>
<td>.63</td>
</tr>
<tr>
<td>Parent x Subj. w. groups [error (within)]</td>
<td>77732.75</td>
<td>12</td>
<td>6477.73</td>
<td>-</td>
</tr>
<tr>
<td>Read x Parent</td>
<td>4761.00</td>
<td>1</td>
<td>4761.00</td>
<td>6.27*</td>
</tr>
<tr>
<td>BO x Read x Parent</td>
<td>6.25</td>
<td>1</td>
<td>6.25</td>
<td>.01</td>
</tr>
</tbody>
</table>
Table 4 cont'd

Birth Order (BO) x Testing Order (TO) x Reading Ability (Read) x Parents (Parent) Analysis of Variance for Both Parents' Total Verbalization Scores (n = 64)

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>TO x Read x Parent</td>
<td>12.25</td>
<td>1</td>
<td>12.25</td>
<td>.02</td>
</tr>
<tr>
<td>BO x TO x Read x Parent</td>
<td>1722.25</td>
<td>1</td>
<td>1722.25</td>
<td>2.27</td>
</tr>
<tr>
<td>Read x Parent x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subj. w. groups [error (within)]</td>
<td>9106.75</td>
<td>12</td>
<td>758.90</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>294524.94</td>
<td>63</td>
<td>4675.00</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
Table 5
Birth Order (BO) x Testing Order (TO) x Reading Ability (Read) Analysis of Variance for Mothers' Total Verbalization Scores (n = 32)

<table>
<thead>
<tr>
<th>Source</th>
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<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>BO</td>
<td>16380.50</td>
<td>1</td>
<td>16380.50</td>
<td>2.77</td>
</tr>
<tr>
<td>TO</td>
<td>2664.50</td>
<td>1</td>
<td>2664.50</td>
<td>.45</td>
</tr>
<tr>
<td>BO x TO</td>
<td>4753.13</td>
<td>1</td>
<td>4753.13</td>
<td>.80</td>
</tr>
<tr>
<td>Subj. w. groups [error (between)]</td>
<td>70895.75</td>
<td>12</td>
<td>5907.98</td>
<td></td>
</tr>
<tr>
<td>BO x Read</td>
<td>1860.50</td>
<td>1</td>
<td>1860.50</td>
<td>2.30</td>
</tr>
<tr>
<td>TO x Read</td>
<td>392.00</td>
<td>1</td>
<td>392.00</td>
<td>.48</td>
</tr>
<tr>
<td>BO x TO x Read</td>
<td>1770.13</td>
<td>1</td>
<td>1770.13</td>
<td>.16</td>
</tr>
<tr>
<td>Read x Subj. w. groups [error (within)]</td>
<td>9704.25</td>
<td>12</td>
<td>808.69</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>108540.88</td>
<td>31</td>
<td>3501.39</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
designed by Barr, Goodnight, Sall, and Helwig (1976) was utilized for all analyses; an IBM-360-65 Computer (Model IH with LCS) was employed.

Means and standard deviations for communication category frequencies emitted by both parents together (with RPs and with NAs) are presented in Table 6. Graphic representations of these means are presented in Figure 1. Relevant findings (by communication category) from the BO x TO x Read x Parent analyses of variance are summarized in Table 7.

Means and standard deviations for communication category frequencies emitted by mothers (with RPs and with NAs) are presented in Table 8. Graphic representations of these means are presented in Figure 2. Relevant findings (by communication category) from the BO x TO x Read analyses of variance are summarized in Table 9. Table 10 contains the means and standard deviations for communication category frequencies emitted by fathers with RPs and NAs. Figure 3 represents these means graphically. Table 11 summarizes the relevant findings from the BO x TO x Read analyses of variance for fathers. Summarization of the results will be undertaken in terms of the hypotheses and their relevant dependent measures.

In Hypothesis 1, it was stated that parents were expected to do the following: (a) emit more comments of a directive, intrusive nature (i.e., Total Direction) with RPs than with NAs, (b) emit more comments providing partial
Table 6
Means and Standard Deviations for Communication Category
Frequencies by Both Parents with RPs and NAs (n = 64)

<table>
<thead>
<tr>
<th>Communication Category</th>
<th>RP M</th>
<th>RP SD</th>
<th>NA M</th>
<th>NA SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Direction</td>
<td>49.63</td>
<td>39.80</td>
<td>41.97</td>
<td>35.34</td>
</tr>
<tr>
<td>General Direction</td>
<td>13.09</td>
<td>10.75</td>
<td>11.84</td>
<td>9.64</td>
</tr>
<tr>
<td>Hint/Clue</td>
<td>21.36</td>
<td>18.98</td>
<td>16.91</td>
<td>15.16</td>
</tr>
<tr>
<td>Solving</td>
<td>15.15</td>
<td>17.07</td>
<td>13.22</td>
<td>17.63</td>
</tr>
<tr>
<td>Total Negative</td>
<td>32.03</td>
<td>24.27</td>
<td>23.22</td>
<td>19.08</td>
</tr>
<tr>
<td>Negative Active</td>
<td>24.63</td>
<td>21.88</td>
<td>16.19</td>
<td>13.63</td>
</tr>
<tr>
<td>Negative Passive</td>
<td>7.41</td>
<td>4.69</td>
<td>7.03</td>
<td>9.22</td>
</tr>
<tr>
<td>Total Positive</td>
<td>26.31</td>
<td>17.40</td>
<td>29.41</td>
<td>24.23</td>
</tr>
<tr>
<td>Positive Active</td>
<td>11.81</td>
<td>11.69</td>
<td>13.63</td>
<td>15.02</td>
</tr>
<tr>
<td>Positive Passive</td>
<td>14.50</td>
<td>8.81</td>
<td>15.78</td>
<td>12.02</td>
</tr>
<tr>
<td>Total Verbalization</td>
<td>107.97</td>
<td>68.80</td>
<td>94.59</td>
<td>68.38</td>
</tr>
<tr>
<td>Hand Gestures</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touching</td>
<td>56.72</td>
<td>81.67</td>
<td>39.13</td>
<td>59.35</td>
</tr>
<tr>
<td>Pointing</td>
<td>31.91</td>
<td>35.89</td>
<td>36.34</td>
<td>41.75</td>
</tr>
<tr>
<td>Intonation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>19.53</td>
<td>12.82</td>
<td>18.72</td>
<td>14.52</td>
</tr>
<tr>
<td>Neutral</td>
<td>51.22</td>
<td>32.34</td>
<td>55.44</td>
<td>46.53</td>
</tr>
<tr>
<td>Negative</td>
<td>26.88</td>
<td>30.00</td>
<td>28.59</td>
<td>26.27</td>
</tr>
</tbody>
</table>
Figure 1. Mean Communication Category Frequencies by Both Parents with RPs and NAs. (Abbreviations: GD=General Direction; HG=Hint/Clue; S=Solve; AN=Negative Active; NP=Negative Passive; PA=Positive Active; PP=Positive Passive; T=Touch; P=Point; NI=Negative Intonation; PI=Positive Intonation)
Tab 17
Sources of Variance and $F$ Ratios of Relevant Findings (by Communication Category) from the Birth Order x Test Order x Read x Parent Analyses of Variance for Both Parents ($n = 64$)

<table>
<thead>
<tr>
<th>Communication Category</th>
<th>Source</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Direction</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>General Direction</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hint/Clue</td>
<td>Read x Parent</td>
<td>5.22*</td>
</tr>
<tr>
<td>Solving</td>
<td>TO</td>
<td>4.57*</td>
</tr>
<tr>
<td>Total Negative</td>
<td>Read</td>
<td>4.86*</td>
</tr>
<tr>
<td>Negative Active</td>
<td>Read</td>
<td>7.86*</td>
</tr>
<tr>
<td></td>
<td>Read x Parent</td>
<td>6.51*</td>
</tr>
<tr>
<td>Negative Passive</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Positive</td>
<td>Read</td>
<td>4.86*</td>
</tr>
<tr>
<td>Positive Active</td>
<td>BO</td>
<td>5.64*</td>
</tr>
<tr>
<td>Positive Passive</td>
<td>BO x TO x Read</td>
<td>5.67*</td>
</tr>
<tr>
<td>Total Verbalization</td>
<td>Read x Parent</td>
<td>6.27*</td>
</tr>
<tr>
<td>Hand Gestures</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Touching</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pointing</td>
<td>BO x Read</td>
<td>7.25*</td>
</tr>
</tbody>
</table>
Table 7 cont'd

Sources of Variance and F Ratios of Relevant Findings
(by Communication Category) from the Birth Order x
Test Order x Read x Parent Analyses of Variance
for Both Parents (n = 64)

<table>
<thead>
<tr>
<th>Communication Category</th>
<th>Source</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intonation</td>
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<td></td>
</tr>
<tr>
<td>Positive</td>
<td>TO x Read</td>
<td>4.52*</td>
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<tr>
<td>Neutral</td>
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<td></td>
</tr>
<tr>
<td>Negative</td>
<td>BO x Read</td>
<td>7.48*</td>
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<tr>
<td></td>
<td>Read x Parent</td>
<td>5.66*</td>
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</table>

*p < .05
Table 8
Means and Standard Deviations for Communication Category
Frequencies by Mothers with RPs and NAs (n = 32)

<table>
<thead>
<tr>
<th>Communication Category</th>
<th>RF M</th>
<th>SD</th>
<th>NA M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Direction</td>
<td>43.38</td>
<td>22.60</td>
<td>43.69</td>
<td>31.56</td>
</tr>
<tr>
<td>General Direction</td>
<td>11.38</td>
<td>7.84</td>
<td>10.50</td>
<td>9.02</td>
</tr>
<tr>
<td>Hint/Clue</td>
<td>18.06</td>
<td>10.62</td>
<td>20.00</td>
<td>17.39</td>
</tr>
<tr>
<td>Solving</td>
<td>13.94</td>
<td>10.47</td>
<td>13.19</td>
<td>14.02</td>
</tr>
<tr>
<td>Total Negative</td>
<td>25.31</td>
<td>15.66</td>
<td>20.69</td>
<td>15.19</td>
</tr>
<tr>
<td>Negative Active</td>
<td>18.69</td>
<td>14.23</td>
<td>15.31</td>
<td>13.29</td>
</tr>
<tr>
<td>Negative Passive</td>
<td>6.63</td>
<td>3.42</td>
<td>5.38</td>
<td>3.36</td>
</tr>
<tr>
<td>Total Positive</td>
<td>24.19</td>
<td>17.83</td>
<td>32.38</td>
<td>29.40</td>
</tr>
<tr>
<td>Positive Active</td>
<td>10.94</td>
<td>10.69</td>
<td>16.06</td>
<td>18.90</td>
</tr>
<tr>
<td>Positive Passive</td>
<td>13.25</td>
<td>7.77</td>
<td>16.31</td>
<td>12.86</td>
</tr>
<tr>
<td>Total Verbalization</td>
<td>92.88</td>
<td>46.92</td>
<td>96.75</td>
<td>70.90</td>
</tr>
</tbody>
</table>

Hand Gestures

<table>
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<tr>
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<th>RF M</th>
<th>SD</th>
<th>NA M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touching</td>
<td>55.38</td>
<td>78.07</td>
<td>33.69</td>
<td>39.70</td>
</tr>
<tr>
<td>Pointing</td>
<td>27.31</td>
<td>21.64</td>
<td>36.31</td>
<td>27.34</td>
</tr>
</tbody>
</table>

Intonation

<table>
<thead>
<tr>
<th></th>
<th>RF M</th>
<th>SD</th>
<th>NA M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>20.69</td>
<td>14.36</td>
<td>22.31</td>
<td>14.44</td>
</tr>
<tr>
<td>Neutral</td>
<td>48.50</td>
<td>28.45</td>
<td>62.69</td>
<td>46.27</td>
</tr>
<tr>
<td>Negative</td>
<td>12.38</td>
<td>11.83</td>
<td>22.63</td>
<td>21.68</td>
</tr>
</tbody>
</table>
Figure 2. Mean Communication Category Frequencies by Mothers with RPs and NAs. (Abbreviations: GD=General Direction; Hc=Hint/Clue; S=Speak; AN=Negative Active; NP=Negative Passive; PA=Positive Active; PP=Positive Passive; T=Touch; P=Point; NI=Negative Intonation; PI=Positive Intonation)
<table>
<thead>
<tr>
<th>Communication Category</th>
<th>Source</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Direction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Direction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hint/Clue</td>
<td>BO</td>
<td>4.70*</td>
</tr>
<tr>
<td></td>
<td>BO x Read</td>
<td>5.06*</td>
</tr>
<tr>
<td></td>
<td>BO x TO x Read</td>
<td>6.08*</td>
</tr>
<tr>
<td>Solving</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Negative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Active</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Passive</td>
<td>BO x Read</td>
<td>9.10**</td>
</tr>
<tr>
<td>Total Positive</td>
<td>BO</td>
<td>4.56*</td>
</tr>
<tr>
<td></td>
<td>Read</td>
<td>4.96*</td>
</tr>
<tr>
<td>Positive Active</td>
<td>BO</td>
<td>6.59*</td>
</tr>
<tr>
<td>Positive Passive</td>
<td>BO x TO x Read</td>
<td>9.94**</td>
</tr>
<tr>
<td>Total Verbalization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand Gestures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pointing</td>
<td>Read</td>
<td>6.16*</td>
</tr>
<tr>
<td></td>
<td>BO x Read</td>
<td>15.17**</td>
</tr>
</tbody>
</table>
Table 9 cont'd

Sources of Variance and $F$ Ratios of Relevant Findings
(by Communication Category) from the Birth Order x
Test Order x Read Analyses of Variance for
Mothers ($n = 32$)

<table>
<thead>
<tr>
<th>Communication Category</th>
<th>Source</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intonation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Neutral</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Negative</td>
<td>Read</td>
<td>5.94*</td>
</tr>
</tbody>
</table>

* $p < .05$
** $p < .01$
Table 10
Means and Standard Deviations for Communication Category Frequencies by Fathers with RPs and NAs (n = 32)

<table>
<thead>
<tr>
<th>Communication Category</th>
<th>RP</th>
<th></th>
<th>NA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Total Direction</td>
<td>55.88</td>
<td>51.76</td>
<td>40.25</td>
<td>39.74</td>
</tr>
<tr>
<td>General Direction</td>
<td>14.81</td>
<td>13.07</td>
<td>13.19</td>
<td>10.33</td>
</tr>
<tr>
<td>Hint/Clue</td>
<td>24.89</td>
<td>24.66</td>
<td>13.81</td>
<td>12.34</td>
</tr>
<tr>
<td>Total Negative</td>
<td>38.75</td>
<td>29.60</td>
<td>25.75</td>
<td>22.54</td>
</tr>
<tr>
<td>Negative Active</td>
<td>30.56</td>
<td>26.68</td>
<td>17.06</td>
<td>14.35</td>
</tr>
<tr>
<td>Negative Passive</td>
<td>8.19</td>
<td>5.69</td>
<td>8.69</td>
<td>12.59</td>
</tr>
<tr>
<td>Total Positive</td>
<td>28.44</td>
<td>17.28</td>
<td>26.43</td>
<td>18.17</td>
</tr>
<tr>
<td>Positive Active</td>
<td>12.69</td>
<td>12.84</td>
<td>11.19</td>
<td>9.81</td>
</tr>
<tr>
<td>Positive Passive</td>
<td>15.75</td>
<td>9.83</td>
<td>15.25</td>
<td>11.50</td>
</tr>
<tr>
<td>Total Verbalization</td>
<td>123.06</td>
<td>84.23</td>
<td>92.44</td>
<td>68.02</td>
</tr>
<tr>
<td>Hand Gestures</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touching</td>
<td>58.06</td>
<td>87.67</td>
<td>44.56</td>
<td>75.10</td>
</tr>
<tr>
<td>Pointing</td>
<td>36.50</td>
<td>46.35</td>
<td>36.38</td>
<td>53.43</td>
</tr>
<tr>
<td>Intonation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>18.50</td>
<td>11.45</td>
<td>15.13</td>
<td>14.13</td>
</tr>
<tr>
<td>Neutral</td>
<td>53.94</td>
<td>36.55</td>
<td>48.19</td>
<td>47.13</td>
</tr>
<tr>
<td>Negative</td>
<td>41.38</td>
<td>35.67</td>
<td>34.56</td>
<td>29.67</td>
</tr>
</tbody>
</table>
Figure 3. Mean Communication Category Frequencies by Fathers with RPs and NAs. (Abbreviations: OD=General Direction; HC=Hint/Clue; S=Say; AN=Negative Active; NP=Negative Passive; PA=Positive Active; PP=Positive Passive; T=Touch; P=Point; NI=Negative Intonation; PI=Positive Intonation)
Table 11
Sources of Variance and F Ratios of Relevant Findings
(by Communication Category) from the Birth Order x
Test Order x Read Analyses of Variance for
Fathers (n = 32)

<table>
<thead>
<tr>
<th>Communication Category</th>
<th>Source</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Direction</td>
<td>Read</td>
<td>5.38*</td>
</tr>
<tr>
<td>General Direction</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hint/Clue</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Solving</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Negative</td>
<td>Read</td>
<td>5.01*</td>
</tr>
<tr>
<td>Negative Active</td>
<td>Read</td>
<td>10.15**</td>
</tr>
<tr>
<td>Negative Passive</td>
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<td>-</td>
</tr>
<tr>
<td>Total Positive</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Positive Active</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Positive Passive</td>
<td>TO</td>
<td>5.31*</td>
</tr>
<tr>
<td>Total Verbalization</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hand Gestures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touching</td>
<td>Read</td>
<td>4.60*</td>
</tr>
<tr>
<td>Pointing</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Table 11 cont'd

Sources of Variance and F Ratios of Relevant Findings (by Communication Category) from the Birth Order x Test Order x Read Analyses of Variance for Fathers (n = 32)

<table>
<thead>
<tr>
<th>Communication Category</th>
<th>Source</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intonation</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Positive</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Neutral</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Negative</td>
<td>BO x Read</td>
<td>5.17*</td>
</tr>
</tbody>
</table>

*p < .05

**p < .01
task solutions (i.e., Hint/Clue) or complete solutions (i.e., Solving) with RPs than with NAs, and (c) manipulate the task materials (i.e., Touching) more with RPs than with NAs.

Hypothesis la was supported only in the case of the fathers, who made significantly more Total Direction comments with RPs than they did with NAs. Although the mothers also made more of these comments with RPs than with NAs, the difference was not statistically significant.

Hypothesis lb was supported in the case of the fathers, but was partially contradicted by mothers. A Read x Parent interaction effect for the Hint/Clue measure suggested that fathers made significantly more of these comments with RPs than with NAs, $F (1,12) = 7.53, p < .05$, while mothers' differences were not significant on the basis of reading ability alone. However, a Birth Order x Read interaction for mothers indicated that, among younger children, NA-Ys were the object of more Hint/Clue comments than were RP-Ys, $F (1,12) = 5.41, p < .05$. With younger children, therefore, the direction of mothers' differential behaviour on this measure was opposite to that which was hypothesized.

Hypothesis lb was not supported in the case of the Solving measure. There were no differences between RPs and NAs revealed by any of the analyses. Only a Testing Order main effect was evident, which revealed that both parents made significantly more Solving comments with
those children who performed the task second than with those children who performed the task first.

The prediction contained in Hypothesis 1c was supported only in the case of fathers, who manipulated the task materials more with RPs than with NAs. Inspections of Figure 2 and Table 8 indicate that mothers' behaviour on this measure was considerably more frequent with RPs than with NAs, but this difference failed to reach statistical significance as a result of the way in which the variance was partitioned in the three-way analyses of variance. The error term for mothers was many times larger than that for fathers.

Although no hypotheses were formulated for the Pointing measure, it was included as a nonverbal measure of directing and intrusion which was less extreme than the Touching or confiscation of the task materials. When both parents were considered together on this measure, a statistically significant Birth Order x Read interaction effect was evident. Analyses of simple main effects indicated that parents pointed more with younger NAs than with (a) younger RPs, $F(1,12) = 12.82, p < .01$ or (b) older NAs, $F(1,12) = 17.38, p < .01$. This, in turn, was predominantly attributable to the behaviour of mothers (see Table 8; Figure 2), who pointed dramatically more frequently with younger NAs than with RP-Os, RP-Ys, or NA-Os. There were no statistically significant differences
among these three groups.

In Hypothesis 2, it was stated that parents were expected to do the following: (a) emit more comments designating disagreement, scepticism, criticism, and annoyance (i.e., Total Negative) with RPs than with NAs, and (b) emit more vocalizations accompanied by negative, displeased, or punitive intonation with RPs than with NAs.

Hypotheses 2a was supported in the case of both parents together, but separate analyses by parent suggested that this was attributable largely to the behaviour of fathers, who emitted significantly more Total Negative comments with RPs than with NAs. Mothers' differences were in the predicted direction but failed to reach commonly accepted levels of statistical significance.

Negative Active comments were emitted in the case of both parents together significantly more frequently with RPs than with NAs, thereby supporting the hypothesis. Analysis of the Read x Parent interaction, however, revealed that this was due, for the most part, to the behaviour of fathers. Fathers made more Negative Active comments with RPs than did mothers, \( F(1,12) = 17.90, \ p < .01 \), and they made more of these comments with RPs than with NAs, \( F(1,12) = 23.13, \ p < .01 \). Mothers' differential Negative Active commenting was in the anticipated direction, but not significantly so.

Analysis of mothers' Negative Passive comments resulted
in a Birth Order x Read interaction which was attributable to a main effect for age (as opposed to birth order), $F(1,12) = 9.10$, $p < .01$. Mothers emitted more of these comments with younger than with older children, regardless of their reading ability.

Hypothesis 2b, regarding Negative Intonation, was not supported in the case of fathers. In the case of the mothers, the results were opposite to those predicted. Simple main effects for Parent and a main effect for Age revealed that fathers made significantly more vocalizations with Negative Intonation than mothers did (with both RPs and NAs), and that the fathers made significantly more of these comments with younger children than with older children, regardless of their reading ability. Mothers, on the other hand, did interact differentially with children on the basis of reading ability for this variable, but in the opposite direction from that which was hypothesized. They made significantly more vocalizations of Negative Intonation with NAs than with RPs.

The predictions contained in Hypothesis 3 were that parents were expected to do the following: (a) emit fewer comments designating unsolicited praise, enthusiastic acknowledgement, or spontaneous encouragement (i.e., Positive Active) with RPs than with NAs, and (b) emit fewer vocalizations accompanied by pleasant or positive intonation (i.e., Intonation Positive) with their RP sons than
with their NA sons.

Hypothesis 3a was not supported. Parents did not emit significantly fewer Positive Active comments with RPs than with NAs. However, both parents together, and mothers in particular, did emit more of these comments with RP-O/NA-Y sibling pairs than with RP-Y/NA-O sibling pairs.

There was some indirect support for this hypothesis in that analyses of simple main effects for the Read x Parent interaction suggested that mothers made significantly more Total Positive comments with NAs than with RPs, \( F(1,12) = 4.96, p < .05 \), as was expected. Fathers, however, did not behave differently with RPs and NAs on this variable.

Analysis of Positive Passive comments lent no support to Hypothesis 3a. A significant BO x TO x Read interaction was evident in the case of both parents’ behaviour together on this measure. Analyses of simple, simple main effects indicated that, when NAs were the older of a sibling-pair, NAs who performed the task first (NA-O-1st) were the object of significantly more Positive Passive comments than were NAs who performed the task second (NA-O-2nd), \( F(1,12) = 14.78, p < .01 \). There were no differences between them when they were the younger of a sibling-pair.

Mothers’ behaviour on this measure also resulted in a
BO x TO x Read interaction effect. It was indicated by analyses of simple interaction effects that there was a significant BO x TO interaction in the case of NAs, but not for RPs, $F(1,12) = 5.42, p < .05$. The nature of the interaction was as follows: when RPs were the first to perform the task, followed by NAs, mothers emitted significantly more Positive Passive comments with younger NAs than with older NAs, $F(1,12) = 5.72, p < .05$. When NAs were the first to perform the task, however, there were slightly, but not significantly, more of these comments made with the older NAs than with the younger NAs.

Hypothesis 3b, regarding the expectation that RPs would be the object of fewer vocalizations of Positive Intonation than NAs, was not supported in any of the analyses. The only significant finding was a Test Order x Read interaction which indicated that parents vocalized significantly more Positive Intonation with NA children with whom they performed the task first than they did with NAs with whom they performed the task second, $F(1,12) = 6.43, p < .05$.

Finally, no hypotheses were formulated regarding the Total Verbalization measure, but it will be noted here as a presumed indicator of the parents' total involvement with, or attention to, each of their two children. Figures 4, 5, and 6 are graphic representations of mothers',
Figure 4. Mothers
Figure 5. Fathers
Figure 6. Both Parents

Mean Total Verbalization Frequencies by Mothers, Fathers, and Both Parents with Older and Younger RPo and NAs. (Abbreviations: Y=Younger; O=Older.)
fathers', and both parents' combined Total Verbalization with their children, based upon the children's birth order and reading ability. Statistical analyses resulted in a Read x Parent interaction for both parents together, and a Read main effect for fathers. Inspections of Figures 4 and 5 reveal the bases for these effects. Father's verbalizations were: (a) more frequent with RPs, regardless of their birth order, (b) somewhat less frequent with NA-Ys, and (c) least frequent with NA-Os. Mothers, on the other hand, verbalized (a) most frequently with NA-Ys and RP-Os, (b) somewhat less frequently with NA-Os, and (c) least frequently with RP-Ys. Fathers verbalized considerably more with RP-Ys than did mothers, while mothers verbalized considerably more with NA-Ys than did fathers. Within sibling pairs (i.e., RP-Y/NA-O; NA-Y/RP-O), mothers tended not to verbalize differentially with their children on the basis of reading ability. In contrast, fathers tended not to verbalize differentially on the basis of reading ability any more than did mothers when with an RP-O/NA-Y sibling pair, but did behave much more differentially with RP-Y/NA-O sibling pairs.

Inspection of Figure 6 indicates that the differences of Total Verbalization emitted by both parents together was minimal within RP-O/NA-Y sibling pairs. When the pairs were composed of an RP-Y and an NA-O, however, the younger RP was the object of more Total Verbalization than was his
older NA sibling, who was the object of the least verbaliza-
tion by the parents.
CHAPTER IV

DISCUSSION

The principal purpose of this study was to discern whether either or both parent(s) of a diagnosed reading-problem boy (RP) would interact differently with him than with his normally-achieving male sibling (NA). To accomplish this, parents were directly observed while performing a non-reading achievement task, both with their RP son and their NA son. The parents' behaviour with each child was then quantified and compared according to the following qualitative characteristics of their communications: (a) their directing, intrusive, and/or "taking-over" nature, (b) their positive, enhancing, and/or rewarding nature, and (c) their negative, devaluing, and/or punitive nature. A second area of investigation which was permitted by the study's methodological design was the comparison of the mothers' and the fathers' differential behaviour in the experimental situation. Discussion of the results will first address the primary issue of whether and how RP boys and their NA brothers were the objects of contrasting parental behaviour. The discussion will then examine the parental differences which were evident. Third, the results of the present study, as well as previous research in the area, will be integrated to characterize

104.
the reading-problem child's communicational environment with reference to possible developmental issues. Finally, the study's remedial implications and recommendations for future research will be presented.

**Differential Interaction with RPs and NAs**

The general expectation that RPs and NAs would be the objects of differential communication by their parents was clearly supported. The differential behaviour of one or both parent(s) with RPs vs. NAs was statistically significant (i.e., $p < .05$) on nine of the fifteen dependent variables. On another three variables, differences occurred between the boys, but these differences failed to reach commonly accepted levels of statistical significance (i.e., $.05 < p < .10$).

Previous rating-scale and direct-observational research indicated that the parents would perceive their reading-problem son as being less attentive, less persevering, less competent, and less capable of succeeding autonomously than their normally-achieving son. The parents were expected to communicate these expectations throughout the performance of the achievement task such that, in comparison to the normally-achieving boy, the reading-problem boy would be the object of: (a) more direction of and intrusion upon his task-performance, (b) more provision of partial and
complete task solutions in lieu of his deriving these solutions for himself, and (c) more "taking-over" of the actual task performance from him.

These anticipated events were generally confirmed by the results, particularly in the case of the fathers. The fathers made significantly more Total Direction (i.e., General Direction + Hint/Clue + Solve) comments with RPs than with NAs. They also provided partial task solutions (i.e., Hint/Clue) and confiscated the task materials (i.e., Touching) significantly more frequently with their RP sons than with their NA sons. Thus, although the fathers did not verbally offer complete solutions (i.e., Solve) with their RP sons significantly more frequently than with their NA sons, they did interfere with the RPs' autonomous task performance by intruding onto the actual manual manipulation of the blocks. Anecdotally, this was observed in the extreme in the case of four fathers who completely took over extended portions of the task solution, so that the RP son was left to observe silently his father's performance. This would not be reflected in the Touching measure because the code was designed to permit scoring of only a single instance of Touching as long as the parent did not release his/her grasp of the block(s). When the blocks were being held and manipulated for a relatively long period, therefore, the cumulative Touching score was somewhat misleading as an underestimate.
The behaviour of the fathers, then, was generally supportive of not only the hypotheses, but of previous rating-scale research (e.g., Coleman, Bornston, & Fox, 1958; Goldman & Barclay, 1964) and direct-observational research (e.g., Feshbach, 1973; Kaplan, 1970; Miller, Note 2) which characterized the parents of learning-disabled children as being domineering, restricting, intrusive, and fostering a dependent, directing relationship.

The mothers, on the other hand, did not demonstrate the clearly differential directing and intrusive behaviours with RPs in contrast to NAs that their husbands demonstrated. The mothers' Total Direction and Touching behaviours were more frequent with RPs than with NAs, but these differences failed to reach commonly accepted levels of statistical significance. In addition, the mothers appeared to be influenced by both the child's birth order and his reading ability in verbally providing partial task solutions (i.e., Hint/Clue). Among older children, the mothers made slightly, but not significantly, more of these comments with RPs than with NAs, as was expected. Among younger children, however, they reversed this pattern and contradicted the predicted direction of their behaviour by making significantly more Hint/Clue comments with NAs than with RPs. It was noted in the Method (Table 2) that younger NAs, as a group, were significantly younger than younger RPs. The mean age difference of approximately 24 months for these groups may
have accounted, in part, for the mothers' unexpected be-
behaviour with them, in view of the difficulty the experimental
task should have presented younger children. It was notable,
however, that within sibling pairs (i.e., RP-O/NA-Y) where
the mean age difference between brothers was 36 months,
the mothers' differential Hint/Clue commenting was not
statistically significant in spite of the extreme age
differences.

The mothers' Pointing behaviour may have reflected these
age differences more dramatically, however. The analyses
resulted in a significant main effect for reading ability
in the direction of NAs being the object of more Pointing
than RPs. However, investigation of the Birth Order x Read
interaction revealed that this could be attributed to the
extremely high frequency of Pointing with NA-Ys, while
RP-0s, NA-0s, and RP-Ys were not the objects of differential
pointing.

In summary, RPs were the object of more directing and
intrusive communications, more communications of partial
verbal solutions, and more taking-over of the task per-
formance than their NA siblings, as was anticipated. The
source of these communications, however, tended to be the
fathers, rather than both parents together.

Previous research has also indicated that parents
would perceive their RP child as being less pleasant, less
likeable, less acceptable, and more troublesome or irritating
than their NA child. It was expected, therefore, that the parents would communicate these feelings and expectations, such that, in comparison to the NA child, the RP would be the object of (a) more verbal scepticism, disagreement, criticism and annoyance, as well as (b) more vocalizations accompanied by unpleasant, negative intonation. Again, these predictions were generally supported by the results, although it was the fathers' behaviour which tended to conform to the hypotheses more so than the mothers' behaviour.

The fathers made significantly more Total Negative (i.e., Negative Active + Negative Passive) comments with RPs than with NAs, as was expected. They also made significantly more Negative Active comments with RPs than with NAs, while distributing their Negative Passive remarks approximately equally between the two groups. The coding criteria for differentiating between Negative Passive and Negative Active remarks are explained in detail in Appendix E, Section IV. Briefly, the Negative Passive subcategories included passive rejection, indirect and solicited (by the child), disagreement, and indirect withholding of assistance or support. Negative Active subcategories included overtly negative remarks, unsolicited disagreement and/or criticism, anger, and sarcasm. It was the latter group of remarks which the fathers emitted more frequently with their RP sons at the .01 level of
statistical significance.

The direction of the fathers' differential verbal behaviour was quite in line with the findings of Kaplan (1970) and of Feshbach (1973) in their direct-observational studies of mothers. Nevertheless, it was somewhat surprising to note the extent to which a number of the fathers in the present sample would go in their negative comments; particularly in view of their awareness of being observed and videotaped. While Kaplan noted no overt hostility being manifested by her mothers, and Peck (1970) observed a general attempt to present a "happy family image," some of the fathers in the present study were not beyond overt manifestations of anger with their RP sons, frank insult, and/or name-calling. In this regard the fathers behaved in a manner similar to the clinic-samples of Grunebaum et al., (1962) and of Miller and Westman (1964), who characterized their fathers as presenting a dominating, derogating, and punitive facade. Since it is generally assumed that families will tend to censor their behaviour in socially-acceptable ways while in public, it might be conjectured either that (a) the fathers in the present study were unique in this regard, or (b) their levels of annoyance with and/or criticism and rejection of their reading-problem sons could be rather intense outside of the laboratory situation.

In contrast to the fathers, the mothers made slightly
more Negative Passive and Negative Active remarks with RPs than with NAs, but these differences were not statistically significant.

As was the case with measures of direction and intrusion, the mothers' negative and rejecting behaviours appeared to be influenced by a child's birth order. Their Negative Passive comments were significantly more frequent with younger than with older children, regardless of their reading ability. In addition, their frequencies of Negative Intonation were higher with NAs than with RPs, although this could be attributed to the relatively high proportion of this behaviour being emitted with NA-Ys.

In summary, the RP children in the sample tended to be the objects of more negative, rejecting, and punitive remarks by their parents than were their NA siblings. The source of these communications, however, tended to be the fathers, rather than the parental pair. Taken together, the results of the Direction and Negative measures clearly supported the notion that the reading-problem child would be perceived, and interacted with, as being less capable, less competent, less acceptable, and less likeable than his normally-achieving brother, at least by the fathers in these families.

It was logically expected to follow that similar differences would be manifested in the positive realm, in spite of previously reported unsuccessful attempts to dis-
cover these differences in similar studies. It was anticipated that, in contrast to NAs, the RPs would be the objects of (a) fewer comments designating unsolicited praise, enthusiastic acknowledgement, or spontaneous encouragement and support (i.e., Positive Active), and (b) fewer vocalizations accompanied by a positive or pleasant intonation. The results provided partial, indirect support for these predictions in the case of the mothers, while the fathers' behaviour tended to be contrary to that which was expected.

The Positive Active and Positive Passive subcategories are described in detail in Appendix E, Section III. The Positive Active subcategory included remarks which were positive, enhancing, or complimentary, and were (a) accompanied by obvious affect, or were (b) spontaneously emitted. The positive, enhancing remarks included in the Positive Passive subcategory were (a) bland or perfunctory, or (b) directly demanded or solicited by the child. The mothers made each type of remark more frequently with NAs than with RPs, but the differences failed to reach commonly accepted levels of significance (i.e., \( p = .076 \) & \( p = .065 \), respectively). They did make significantly more Total Positive (i.e., Positive Active + Positive Passive) remarks with NAs than with RPs, but their Positive Intonation vocalizations were distributed approximately equally among NAs and RPs. The hypotheses, therefore, were only partially supported in the case of the mothers.
The hypotheses derived no statistical support from the behaviour of the fathers on these measures. It was noted, however, that although the mean differences between RPs and NAs were insufficiently large to reach statistical significance, the larger mean was consistently for the RPs. That is, the fathers emitted slightly more Total Positive, Positive Active, and Positive Intonation communications with RPs than with NAs. This was interesting in view of the clearly differential behaviour of the fathers in regard to the various measures of negative communication. It is possible that this apparently discrepant and inconsistent behaviour of the fathers had some bearing upon the Grunebaum et al., and the Miller and Westman observations. If these overtly punitive, domineering fathers were also covertly insecure men who identified with their sons' inadequacies, then a degree of ambivalence and/or empathy for their sons' difficulties with the task might be expected.

The pattern of positive communication demonstrated by the mothers is especially deserving of some discussion. The results would not be particularly striking, except in noting that neither Feshbach (1973), nor Kaplan (1970) were able to discern differential positive behaviour in their direct-observational studies. Feshbach suggested that her reading-retarded children's mothers employed a negative "reinforcement style", viz., the socialization of their children was based upon negative/punitive be-
havioural contingencies in lieu of positive reinforcement. Kaplan similarly characterized her mothers as simply being "non-rewarding." Given the dangers inherent in comparing the results of studies with dissimilar methodological designs (Feshbach studied only mothers of reading-retarded and normally-reading children, comparing the two; Kaplan's design was much the same as the present one, but included only mothers), the results of the present study should bring these inferences into some question.

First of all, the mothers in the present sample did demonstrate differential positive communication. This would suggest that their behaviour may be child-specific rather than stylistic. Secondly, the mothers in the present study clearly did not engage in a preponderance of negative communication to the exclusion of positive communication. Inspection of Table 8 reveals that their mean frequencies of Total Positive (across RP and NA) is greater than their mean frequencies of Total Negative, and that their mean frequencies of total Positive Intonation is greater than that for total Negative Intonation. Finally, the results of the present study indicated that it was the fathers, not the mothers, who engaged in the punitive interactions. This relationship will be discussed below. The immediate point is that the mothers in the present study could not be considered particularly negative or rejecting.

The discrepant findings of the present study in
comparison to those of the Feshbach and the Kaplan studies might be attributed, in part, to (a) the more comprehensive and sensitive measures of positive communication employed in the present study, (b) the considerably younger children who participated in the previous studies, (c) the fact that the previous research involved both male and female children, but failed to analyze the data separately by sex, thereby possibly distorting the results (Jacob, 1975). The simplest explanation, however, would appear to be that the present study involved both parents together, and that the behaviour that mothers (or fathers) would manifest with her/his children in the experimental situation undergoes some modification when both parents are interacting together and with their child.

If the results of the present study are viewed in terms of the child as recipient of parental communication, they do not diverge notably from previous findings. In contrast to the NA children in this and in the previous studies, the RP was the recipient of more directing and intrusive communications, more negative and punitive communications, and fewer positive communications. The discrepancy derives from identifying the source of these communications, and the consequent inferences which can be made about a parent's characteristics when he/she is studied outside of the immediate context of the parental pair. It is this issue upon which
the discussion will now focus.

**Parental Differences**

A major advantage of the present study's design was to allow investigation of parental differences in relationship to their RP and their NA children. This afforded a more comprehensive—and an ostensibly more valid—examination of the intrafamilial environment than has previously been possible with this population. The author is aware of only three previous direct-observational studies which included both parents of reading- or learning-disabled children (Campbell, 1972; Peck, 1970; Miller, Note 2). In none of these studies were normally-achieving siblings included.

A general perusal of the results of the present study suggests that the participating parents manifested a "division of labour" as far as the dependent measures were concerned. This, of course, is no revelation. Laboratory and clinical studies of families have long acknowledged differential role-ascription, role-acquiescence, and role-complementarity within nuclear family units. The specifics of this differential parental role-taking for the present sample and experimental context follows.

The fathers in the present study presented themselves as being the more domineering, intruding, restricting, rejecting, and punitive of the two parents, particularly with
their reading-problem sons. This was reflected in the 
various significant Read main effects (e.g., Total Direction, 
Touching, Total Negative, and Negative Active) in the case 
of the fathers, but not for the mothers, as well as the 
Read x Parent interactions (e.g., Hint/Clue and Negative 
Active). Interestingly, these are parental characteristics 
which have previously been ascribed to the mothers of 
learning- or reading-problem children in both rating-scale 
and direct-observational studies. In the present sample, 
however, the mothers tended to be the providers of the 
positive, enhancing, and encouraging communications. This 
was reflected in the significant Read main effects for 
Total Positive, the non-significant differences for 
Positive Active and Positive Passive, and the Read x 
Parent interaction for Total Positive. There are a number 
of possible explanations for these results, none of which 
are necessarily mutually exclusive.

First of all, fathers may take the responsibility for 
the more dominant, active role when their families are 
being studied in public, while mothers assume this re-
sponsibility at home. O'Rourke (1963) found this to be 
the case when comparing the behaviour of the same families 
at home and in the laboratory. O'Rourke invoked Balesian 
notions of small-group behaviour to suggest that the 
completion of tasks within the laboratory presents the 
family with a problem of adaptation which will be met by a
predominance of instrumental, task-oriented behaviour. These are behaviours which are characteristically attributed to males (and fathers) in the society. At home, on the other hand, the task presents the family with a problem of integration to be met by a predominance of socio-emotional behaviour, which falls within the domain of mothers. Since the present study presented the families with a public, task-oriented problem of adaptation, it may have been encumbent upon the fathers to "take-over," thereby artificially inhibiting the behaviour of the mothers. It should be noted, however, that Riskin and Faunce (1972) have found family-unit behaviour in the laboratory to be quite coincident with independent observations made in the home.

A second possibility--already alluded to in regard to the Grunebaum et al., and the Miller and Westman formulations--is that the fathers of reading-problem boys may tend to be somewhat rigid, domineering, and/or punitive with them in response to their own perceived short-comings. Investigation of parental self-perceptions was well beyond the purview of the present study. Anecdotally, however, there was some reason to believe that the participating fathers might have been sensitized to the study of their "reading-problem" sons and/or to the achievement task. It was predominantly the mothers who were initially reached by telephone, and three of these mothers agreed to
participate on behalf of their husbands with the explicit condition that the fathers would not have to read anything. In addition, the author noted with interest that although he handed the consent form to the fathers as each family arrived, approximately 50% of these men immediately deferred to their wives for the purpose of reading and explaining the form. In view of this and the available genetic transmission research (e.g., Hallgren, 1950), there was a good possibility that many of these fathers were problem-readers themselves.

In addition, the use of the WAIS Block Design subtest in the present study resulted in the parents being presented with a task which would involve some difficulty for them as well as their sons. It should be noted that the procedure of leaving all nine blocks with the family while the first six designs could be successfully completed only by using four blocks introduced an unexpected difficulty for approximately 50% of the families. These families attempted the impossible and certainly frustrating chore of completing all of the designs with all of the blocks. The fathers may have engaged in more Direction and Negative behaviours out of their own frustration and perceived inadequacy. Even if this were the case, it was notable that the fathers chose to criticize their RP sons rather than their NA sons, themselves, the task, or the experimenter. Anecdotally, it was the RP sons who had had some previous experience with
this type of task by virtue of their neuropsychological assessment. In at least 25% of the families, the RPs attempted to inform their parents of the appropriate task solution. They were, without exception, met with the derogation observed by Miller (Note 2), while the fathers persisted in attempting to use all nine blocks with the perseveration and rigidity noted by Peck (1970).

A third possible explanation for the parental differences is simply that they engaged in role behaviours which were complementary, as would be expected in families without serious difficulties. In this regard the fathers were "in charge" of directing, instructing, controlling, and negative feed-back; the mothers were "in charge" of supporting, encouraging, soothing, and positive feed-back.

Beyond the dependent measures included in the hypotheses, investigation of each parents' Total Verbalization suggests that they may even have taken responsibility for different children. If Total Verbalization is assumed to be an indicator of general attention to, or involvement with, a given child, inspection of Figure 4 and Figure 5 (pg. 101) suggests a parental complementarity in attending to different children on the basis of their reading ability. Within sibling pairs (i.e., RP-O/NA-Y; RP-Y/NA-O), the mothers tended to be more involved with their NA child than with their RP child. Fathers, in complementary fashion, tended to be more involved with their RP child, than with their
NA child.

In summary, the inclusion of both parents together in the present methodological design was of considerable value. The results of the present study would appear to warrant the following suggestions. (1) Fathers are important in this area of study. Their involvement and behaviour in the present study, particularly in relationship to their reading-problem sons, should render them invaluable to further research. In fact, the validity of investigations excluding them may be somewhat questionable. (2) The characteristics manifested by the fathers in the present study were entirely compatible with those observed in the few previous studies in which they have been included. (3) The behaviour of the mothers in the present study indicated that previous descriptions of these women did not endure in the context of the parental pair. This would raise the question of whether the characteristics previously attributed to mothers of learning- or reading-problem children are indeed stylistic, or are child- or situation-specific.

The Communicational Environment of Reading-Problem Boys

Integration of the results of the present study along with those available in the literature lends itself to a "picture" of the learning- or reading-problem boy's
communicational environment. In terms of his intrafamilial environment, he is perceived and interacted with in a manner which indicates that he is less competent, less autonomous, less acceptable, less likeable, and more troublesome than his normally-achieving sibling. He is the object of these communications by his father when both parents are together, and by his mother when father is not present (Feshbach, 1973; Kaplan, 1970). In addition, he is apparently perceived and interacted with in this manner in the classroom among his teachers and his peers (Bryan, 1974a; Bryan & Wheeler, 1972). Regardless of the etiology or chronology of his learning and/or interpersonal difficulties, it can be no surprise that his academic achievement as well as his "social achievement" with teachers, peers, parents and siblings pales in comparison to that of nondisabled children. The implications for role-attribute and scapegoat hypotheses are obvious. Children will acquiesce. They will behave and perceive themselves in a manner which is coincident with the characteristics and role-expectations which are attributed to them by significant others.

The inferences regarding role-attribute which have emerged from the present and other cross-sectional studies are formidable. The author is aware of no longitudinal studies in this area beyond Bryan's (1974b) observations that peer perceptions of learning-disabled children were
maintained over a two-year period. Nevertheless, one might speculate about longitudinal issues.

Developmentally, it would seem that the interaction patterns of learning- or reading-problem children do not undergo major modification. The dependent measures employed in the present study were very similar to those employed by Feshbach and by Kaplan. The results, in terms of communications received by the child, were very similar. What is striking is that there was a 4- to 6-year age difference in the three samples. The present study's 11-year old boys were the object of the same differential interaction as Feshbach's first-graders, and Kaplan's 3- to 8-year olds. It is entirely possible, therefore, that the reading-problem child may be the recipient of these communications and expectations throughout his childhood development.

Further, the issues of maintaining a reading-problem child's dependence might be addressed in a developmental context. Inspection of Figure 5 (pg. 101) suggests that birth order may not have the same implications for RPs that it has for NAs within the family unit. Taken as groups, it can be seen that older normal-achievers were the objects of considerably less verbalization than were younger normal-achievers. It might be conjectured that the parents perceived their normally-achieving children as requiring less attention and assistance.
Older normal-achievers may be attributed with more competence and autonomy than younger normal-achievers. Maturationally this is quite logical. This was not the case, however, for reading-problem children. The older reading-problem boys were attended to more than younger reading-problem children, contrary to what might be anticipated solely on the basis of age. If decreased verbalization is a concomitant of perceived competence and autonomy, then RFs may be attributed less of these qualities as they grow older. If Figure 6 is considered in terms of what transpired within sibling pairs, the implications constitute a replication of Kaplan's results. When the reading-problem son was younger than his normally-achieving sibling, he was the object of considerably more attention and verbalization than his brother. When the reading-problem boy was older than his normally-achieving sibling, however, the incidence of verbalization was close to random between him and his brother.

Taken together, this may well indicate that the parents of reading-problem boys tend to treat them as younger or less mature than their age position would indicate; that is, to infantilize them. If this is the case, the ramifications reach beyond the reading-problem child's development of an optimal self-concept and a set of viable interpersonal skills. As Feshbach (1973), Goldman and Barclay (1974) and others have suggested, a
child who is over-controlled and allowed insufficient autonomy may have difficulty engaging in the exploratory activity necessary for optimal learning.

Implications for Remediation

The implications of the present study for educational remediation only support what has already been discussed at length elsewhere (e.g., Bryan & Bryan, 1975; Kaplan, 1970; Peck, 1970, 1971), and will not be given major attention in the present discussion. To repeat a most appropriate statement by Bryan and Bryan: "Learning disabled children do not suffer only from academic failure; many carry an additional burden of social failure" (p. 123). The results of the present study only dramatized the social failure being experienced by the participating reading-problem boys within their nuclear family units.

It would appear that purely academic remediation in the absence of intervention into the learning-disabled child's family could possibly be of only limited benefit. Assuming that the learning-disabled child "hears" the verbal and nonverbal communicational patterns which were revealed in this study, it would appear that effective remediation would depend, to some degree, upon the effective remediation of his parents' perception of and behavior toward him. This might be accomplished as easily as prescribing that parents "leave him and his
school problems alone," thereby relieving the parents of the responsibility to somehow ensure that he succeeds and helping the boy extricate himself from his identity as a "Problem Reader." Kaplan and McDermott (1976) have discussed the therapeutic effectiveness of "helpers" freeing themselves, their client-families, and the family's identified problem-child by "not helping." Considering the manner in which families and reading-problem boys apparently collude to maintain his being the centre of attention, concern, and direction throughout his school career, an important element in change may be simply the generalized, continual, parental attention rather than the specifics of the attention.

The present study did not attend to the issue of whether the reading-problem boys were being scapegoated via displaced parental conflict. It did, however, clearly demonstrate that the mediational vehicle (i.e., differential communication) and potential for this process was present in these families. Perhaps in some cases, as the Miller and Westman (1964) study suggests, the child's reading problem is a condition of the family's homeostasis. In these cases more active, intensive family intervention would be indicated than the relatively superficial parental counseling described above. Certainly, the present study indicated the value of investigating a learning-disabled child's intrafamilial environment in addition to his
purely intellectual and cognitive capacities and deficits, when attempting to remediate his academic difficulties.

**Recommendations for Future Research**

Perhaps the most salient heuristic value of the present study was the demonstration that this was a viable and effective methodology for the present area of investigation. Although literally hundreds of studies have been carried out with entire family systems or sub-systems to date (Jacob, 1975; Riskin & Faunce, 1972), those with an interest in the family dynamics or social psychology of learning-disabled children have apparently ignored this literature. The present study should assure other investigators that families are amenable to participating in this research, that the technology is readily available to engage in this type of investigation, and that there is a great deal yet to be learned about the intra-familial environments of learning-disabled children.

One obvious question to be pursued is what would transpire if an even more comprehensive observation of the family is undertaken? Would the present results be magnified or diffused if tetrads including the normally-achieving and reading-problem siblings were both included? The author's post-experimental conversations with both siblings suggested that the NA might behave very much like the fathers toward the RP. The next
logical step, then, would be to involve the entire family unit in some similar achievement task.

The influence of the task characteristics in the present study also raises a question. Are the present findings generalizable to non-achievement interaction tasks, or are they task-specific? If this is how RPs and NAs are differentially treated when the demand is to accomplish something, what would transpire without this demand for achievement? Do the families function at play as they do at work? Are these families able to play?

Another obvious facet of the generalization issue is the influence of the laboratory setting. It would be valuable to study these families at home. As was noted above, the literature is unclear and controversial regarding the issue of a family's differential behaviour in private and in public.

Yet another question concerns the diagnostic labelling of the RPs in this study. This was a sample of boys who had already been formally diagnosed in a hospital setting. One could argue either that (a) the diagnostic process constituted a formidable role-attribution to which the parents in the present study were reacting unfavorably, or (b) the diagnosis relieved them of responsibility for "poor parenting," thereby resulting in their interacting more benignly with the RPs subsequent to the diagnosis. A comparison with a diagnosed sample vs. unreferred poor
readers recruited from the schools would shed some light on this question.

The author was struck by the comparatively little parental attention directed toward the older normal-achiever. It could well be that this was an indication of his perceived competence and autonomy, and an attractive role for him. However, one might also speculate that having a younger learning-disabled sibling is a burden to these children in that they are unable to derive the attention and concern they might experience a need for. Boszormenyi-Nagy and Frano (1965) assert that for every family with an identified patient, there is also an isolated, resentful, troubled "well-sibling." It would be interesting to investigate the normally-achieving sibling's perception of himself, his parents, and his learning-disabled brother to discern what difficulties the "normal" child experiences.

Finally, two notes of caution should be offered in regard to the present methodological design. The first is the standardization of the time sample of interaction. The present solution of prorating the scores of families who did not require 15 minutes to complete the task was considered the best available, but hopefully will be avoided in the future. A more desirable solution would be to insure that the families could be kept occupied for whatever time period is decided upon.

Second, the unexpected frustration introduced into
the present study by some families attempting the im-
possible task of completing the designs with all nine
blocks may well have distorted the results to some degree.
Future investigators would do well to make the instructions
more explicit in this regard.
CHAPTER V

SUMMARY AND CONCLUSIONS

The principal purpose of this study was to discern whether either or both parent(s) of a diagnosed reading-problem (RP) boy would interact differently with him than with his normally-achieving (NA) male sibling, when the focus of interaction was a non-reading achievement task. This general hypothesis was clearly supported by the behaviour of one or both parent(s) on nine of the fifteen dependent measures.

In the case of the fathers, the RPs were the objects of significantly more directing and intrusive communications than were the NAs. The fathers emitted more Total Direction remarks, partial-task-solutions, and confiscation of the task materials with RPs than with NAs. The mothers, on the other hand, did not demonstrate clearly differential behaviour on these measures in relationship to a child's reading ability alone. Rather, they offered partial solutions and nonverbal direction more with younger NAs than with other children.

As was anticipated, the fathers were more overtly negative, rejecting, and derogating with RPs than with NAs, although their negative intonations and indirect criticism were distributed approximately equally among
the two groups. The mothers demonstrated differential negative behaviours only by being more indirectly critical with younger children and by emitting more negative intonations with younger NAs than with other children.

It was the mothers who were more generally positive with NAs than with RPs, but the expectation that they would be more actively and enthusiastically positive with NAs was not supported. In the case of the fathers, no significant differences were evident between RPs and NAs. The hypothesis regarding the positive measures were, therefore, only partially supported.

The differences between parents on the dependent measures suggested that they may have engaged in complementary role behaviour. While the fathers were responsible for the directing, instructing and the negative feedback throughout the task, the mothers appeared to take responsibility for the encouraging, the soothing, and the provision of positive feedback. Although the fathers' behaviour was generally supportive of observations made in the few previous studies which had included fathers, the mothers' behaviour was not in line with previous characterizations of them. This would suggest that (a) the previous characteristics attributed to these mothers were child- or situation-specific, that (b) they made adaptational and behavioural adjustments within and without the nuclear family, or that (c) an individual's
behaviour may take on a different "meaning" when viewed within the context of his/her nuclear family unit.

The therapeutic and remedial implications of the present study were that a learning-disabled child's "problems" may not be purely intellectual, cognitive, or academic. Successful remediation for these children may require intervention into their parents' perceptions of and interaction patterns with them, in addition to academic re-programming. The study's most salient heuristic implications were to demonstrate the viability and value of applying this genre of methodological design to the etiology, ramifications, and dynamics of the learning-disability child's "interpersonal-disabilities" within the nuclear family.
APPENDIX A

The Child Behavior Rating Scale
PREVIOUSLY COPYRIGHTED MATERIAL IN
APPENDIX A, LEAVES 135-138,
NOT MICROFILMED.

The Child Behavior Rating Scale, by Russell
N. Cassel, Ed.D. Published by Western Psychological
Services, 12031 Wilshire Boulevard, Los Angeles,
California, U.S.A. 90025.
APPENDIX B

Initial Contact Letter Sent to Families
August 13, 1976

Dear Mr. & Mrs.,

There is presently a research project underway at the University of Windsor Psychology Department and the Neuropsychology Unit, Windsor Western Hospital (Regional Children’s Centre) for which your cooperation would be greatly appreciated. The project is aimed at discovering how children in the same family learn new skills in their own individual ways.

As you know, it has become very important that children today obtain an adequate education throughout the primary grades. It’s clear that a child’s progress in these early years can have a great influence on his educational choices and progress later on. As a result, it is necessary that he benefit as much as possible from his first few years in school.

One of the critical skills children learn in the primary grades is how to read. This is a very complicated skill and much research has been devoted to gaining a scientific understanding of the reading process. The research has been aimed at discovering ways to make certain that each child in school will have the opportunity to learn to read as well as he can. One result of this research has been the discovery that children often tend to learn in slightly different individual ways.

Our project is concerned with looking more closely at the reading process to discover how children in the same family learn new skills such as reading in their own individual ways.

In order to carry out our project, it is necessary that we contact and gain the cooperation of families such as yours. As a family who has used the services of our Neuropsychology Unit in the past, and who presently has at least two children attending primary grades, we are asking your help.
Within the next week, I will contact you by phone. At that time I will be able to discuss the details of our project more thoroughly with you, and describe the kind of participation we are requesting, which would amount to approximately one hour of your time.

Thank you very much for your consideration. If you choose to participate in this project, I think you will find it an interesting and beneficial experience.

Sincerely,

WVM:jp

William V. McDermott
Project Director
APPENDIX C

Confirmation of Appointment Letter
CONFIRMATION OF APPOINTMENT FOR:

Name: ____________________________________________

On: ____________________________________________ 19 __________

At: Regional Children's Centre

With: W. V. McDermott

Department of: Psychology/Neuropsychology

Telephone: 253-4261 Extension: 574

The map on the attached sheet will direct you to our controlled parking area. The parking gate is coin operated by a 25¢ fee for which you will be reimbursed. Please plan to attend for approximately one hour.

Thank you again for your cooperation. If, for some reason, you are unable to keep this appointment, we would greatly appreciate your phoning us as soon as possible.

Sincerely,

William McDermott
Project Director
APPENDIX D

Consent Form
The following is to be signed by the research subject, except in the case of a minor or of a subject who is not competent mentally, in which case it is to be signed by the spouse, parent, guardian, or next-of-kin.

The following is to be read over and explained to the signatory who stated that he/she understood same and offered his/her signature agreeing thereto.

1. RELEASE OF INFORMATION

I, the undersigned, hereby authorize Windsor Western Hospital Centre to release any and all information from my medical record to any medical, social and/or educational authority where in the opinion of the hospital, this information will be used for the benefit of the subject.

I also authorize Windsor Western Hospital Centre to release information as to the nature of my illness, for scientific or teaching purposes.

2. OBTAINING OF INFORMATION FROM OTHER AGENCIES

I, the undersigned, hereby authorize Windsor Western Hospital Centre to obtain information from any medical, social and/or educational authority including medical records at any hospital which previously treated me.

3. OBSERVATION PROCEDURES

I, the undersigned, understand that this study requires the use of video-tape, to be destroyed once the necessary data are obtained, and hereby consent to this procedure.

4. GENERAL INFORMATION

I, the undersigned, understand that this study entails a brief interview where information regarding my family will be reported, and consent to release this information.
5. GENERAL CONSENT

I, the undersigned, have been made aware of the relevant details of the study in which I am going to participate. The procedures to be followed in this study have been fully explained to me, and I agree to participate in the study.

__________________________  I have read 1, 2, 3, 4, and 5 above and give my consent/authorization to all five (5) sections.

Father _____________________  Witness _____________________

Mother _____________________  Witness _____________________

Guardian _________________  Witness _____________________

Other _____________________  Witness _____________________
APPENDIX E

CODE BOOK AND SAMPLE SCORING SHEETS
CODING PROCEDURE

General Coding Considerations

Communications Coded

All verbal communications are to be coded as they occur. Analysis is of the total verbal interaction, as opposed to a time sampling technique.

Scoring Unit

The verbal scoring unit is the meaningful verbal communication. The communication is composed of a word or word combinations with an expressed or implied subject and predicate, which stands alone as a meaningful verbal communication. It is set apart by natural pauses in the speaker's continuity of verbalizing.

Example A: "Use a red one, John." is a unit with subject (John) and predicate (use), and stands alone as a single unit of meaningful verbal communication.

Example B: "Use a white one." is a unit with implied subject (you), an expressed predicate (use), and stands alone as a single unit of meaningful verbal communication.

Example C: "No, put a red one there." is unitized and coded as two meaningful verbal communications, as
follows: /*"No./put a red one there."*/ "No" stands alone as a complete meaningful communication with implied subject and predicate, and is set apart by a natural pause. "put a red one there" stands alone with an implied subject and expressed predicate.

Example D: "O.K., O.K., that's right." is unitized and coded as three meaningful verbal communications as follows: /*"O.K.,/O.K.,/that's right."*/

Example E: "What's the matter, frustrated?" is unitized and coded as two meaningful verbal communications.

Context

Each communication is to be coded with reference to its immediate context, with particular emphasis given to whatever immediately precedes it when attempting to decide the most appropriate category to which it should be assigned.

Example A: "You're really smart." may or may not be coded as a complimentary remark depending upon the context as follows: "You've got it!/"You're really smart."/ is coded as praise, whereas "Can't get this one either?"/"You're really smart"/ would be coded as a criticism.
Example B: "You shouldn't have any trouble with this one" may be coded as an encouraging, supportive remark when the child has just breezed through the previous design and is surveying the next. The same comment, however, would be coded as an active rejection if immediately preceded by "This is too hard for me, Mom."/Will you help me?"/

The Child as Recipient

Of foremost concern in this project is the communication received by the child. At all times, the child as recipient of interactions will be the major consideration in coding, and the coder's focus of attention.

Example A: (Mother to Father) "Should we use all the blocks?" as a request for direction will not be coded if it occurs in isolation. However, if preceded by (Child to Mother) "Is this right?", the mother's comment to father is coded as an active rejection in that she chose not to respond to the child's direct request for assistance.

Example B: (Father to Mother) "He's not as good as his brother was." is coded as a criticism of the child, although father does not say this directly to him.
Double Coding

Double coding is to be avoided, if possible, but will be employed when the subtleties of some verbalizations make it difficult to discern which of the two separate or conflicting categories is the more appropriate, even after consideration of the immediate context. In these cases the communication will be coded in both categories. This will occur frequently for example, when sarcastic remarks are being made.

Example A: The child has just completed a design with much difficulty, frustration, and discomfort. As he surveys the next, more complex design, father says: "Oh boy! Look at that one." (laughter). The context and total stimulus context may make it difficult to discern whether the implied meaning of father's comment is supportive and encouraging, or sarcastic and critical. Double coding into both categories is appropriate.

Example B: The child is having a very difficult time with a design. Father says: "What's wrong, not enough blocks?", such that the supportive vs. criticism distinction is very difficult. Coding into both categories is again appropriate.
CODING CATEGORIES

I  DIRECTION

General Considerations

Scoring the verbal communication of "Direction" involves three subcategories (i.e., "General Direction"; "Cluing/Hinting/Teaching"; "Solving/Taking Over") of parent to child remarks.

Remarks directed to the child which fall within the "Direction" subcategories are scored on the basis of verbal content of the remarks.

Decision Rules

1) The coder must decide whether a remark directed to the child either (a) tells him directly to do something, or (b) implies indirectly that he should do something. This initial decision determines usage of "Direction" categories.

2) Determining which "Direction" subcategory is the most appropriate is accomplished by evaluating the degree of autonomous, independent task performance which is left to the child as a result of the remark.

3) Remarks which tell the child which specific block to use, or specifically how to place it, amount to
"Solving" the task for him by the parents. These remarks leave little or no independent initiative to the child in solving the task.

4) If the remarks provide hints, clues, suggestions or information aiding in solving the tasks, but stop short of revealing specific block placements, they amount to "Clues" or "Hints." In this case an intrusion upon the child's independent solution of the task has been made but he is left with some initiative in finding the solution for himself.

5) If the remarks made are directions, but are more general and non-specific than the above they amount to "General Directing." These remarks are delivered to elicit or maintain his attention or interest, or to generally reiterate the experimental instructions but leave the child with major responsibility and autonomy in working on the task.
II. DIRECTION SUBCATEGORIES

A. General Direction and Orientation

These are general, non-specific remarks which are intended to influence the child, but leave him with major responsibility and autonomy in working on the task. No specific information or suggestions are provided which indicate how he might go about completing the task correctly. Included are:

1. Orienting: Remarks which orient the child to the task to be performed. (E.g., "Ready?"; "Start"; "Begin"; "Go"; "Start with this design"; "Want to start?"; "You're supposed to make this design"; "Let's go"; "Get going"; "Put it together"; Name: "Mike"; "OK?")

2. Attention Eliciting: Remarks intended to elicit the child's attention or to direct his attention. (E.g., "Pay attention"; "Listen"; "Look here"; "Look at the design"; "Watch what you're doing"; "Here"; "Wait"; "Hey"; "Are you listening?"; "See"; "Watch your design.")

3. Attention Maintenance: Remarks intended to maintain the child's attention. (E.g., "Keep going"; "Stay with it"; "Don't give up"; "Try one more time"; "Come on"; "Keep trying.")
4. **Instruction Reiteration:** Reading the instructions out loud or rephrasing the general instructions.
   (E.g., "Make the design with the blocks": "Make it": "Match it": "Make yours look like the book": "Don't rush": "You can do it with those.")

5. **General Directives:** General directing comments.
   (E.g., "Flip them all over": "Fill it in": "Use these": "Put the block down": "Reds and whites up": "You twist them around to make the design": "There's a way to turn them around.")
DIRECTION SUBCATEGORIES

B. Cluing; Hinting

Includes any clue, hint, suggestion or information which hints at a correct block placement, but does not reveal the exact placement, or a specific block to be used (as in Solving remarks). Also included are general guiding principles, general methods of approach, and general factual information.

1. **Number of Blocks**: Remarks which tell or imply to the child how many blocks are to be used. (E.g., "Should you use four [nine] [all of the] blocks here?"; "Use all the blocks"; "I don't think you need all the blocks on this one"; "Maybe four blocks would do it.")

2. **Use of Solid Blocks**: Remarks which tell the child or imply that a solid color block should be used, but without naming the color. (E.g., "You need a solid one there"; "How about a one-colored one?"; "Wouldn't a same-color one go on the top?")

3. **Non-specific Changes**: Remarks suggesting non-specific changes in specific block positions, or indicating incorrect, specific, placement. This will be coded only when it is eminently clear to the coder which specific placement is being dis-
cussed. (E.g., "Now fix that corner one."); "What's wrong with that middle one?"; "That's not red there."; "It's not all white in the corner?"; "What color should go here?"; "There are more than two stripes."; "That top one is turned around."; "Turn it around."; "Is this the same as this?" while pointing.)

4. **General Method of Approach**: Remarks which suggest a general method of approach, without specifying specific block placements. (E.g., "Start from the top"); "Work from left to right"; "Make believe there are lines through the design"; "See, this part is one block"; "Do one row [column] at a time"; "Start in your corners"; "Start with this corner"; "Turn up all your reds.")

5. **Non-specific Design Characteristics**: Explicit verbalizations which direct the child to work on a portion of the design or to direct his attention to general characteristics of the design. (E.g., "They all have to be square"; "You can only go 3 [2] deep"; "You need a point"; "The white line goes this way"; "It's exactly the same on the other side"; "This line goes up and down"; "That one's sideways from the others"; "Do the bottom row"; "Now work on the top [bottom; middle; side]"; "Do your corner"; "What shape is corner?")

6. **Non-specific Manipulation**: General remarks which
direct the child to manipulate the blocks in a way which does not provide a correct specific placement. (E.g., "Work down from there"; "Turn it around"; "Match the reds"; "Bring it down"; "Make it wider"; "Shorter"; "You had it just before"; "You were right the first time.")
C. Solving

Remarks which provide solutions for the child by:

1) **Color Naming:** Naming the color of a block to be used (e.g., "Use a red one"; "Use a white one now"; "You need a red one"; "White"). These remarks also include "reporting back" to the child what already has been done (e.g., "This is white, this is red, another red").

2) **Two-Color Naming:** Specifying that a two-color block should be used. (E.g., "You need a two-color one"; "Use a half and half one"; "Try a slanted one"; "Would a pointy one work?"; "What about a diagonal one?"; "Use a single one.")

3) **Block Placement Specification:** Specifying where a block should be placed such that the coder is able to comprehend the instruction sufficiently to know where the block is to be placed. This can be communicated (a) entirely by verbal remarks (e.g., "Put that under the white one"; "Slide that along side the slanty one"; "Will that work in the middle?") OR (b) by an appropriate combination of verbal and visual cues, as when the parent is pointing to the place where the block is to be
positioned. (E.g., "Put it there" while pointing; "Here" while pointing.)

4) **Block Manipulation Specification**: Indicating a specific manipulation of a specific block such that the coder would know precisely how to follow the direction. (E.g., "Turn that one upside down.") This includes the parent describing what the parent is doing for the child. (E.g., "Like this" while placing blocks.)

5) **Enquiry Responses**: Solving remarks may also be presented as answers to questions by the child. In these cases the parental response will usually be only "Yes"; "O.K."; "All right", or some other verbalizations of agreement. The coding of the response as **Solving** will be determined by the degree of specificity of the child's question (e.g., "Yes" in response to "Is this right?"; "Yes" in response to "Do I need a red one?"; "Yes" in response to "Put it here?"). In general a "Yes" answer will be as specific as the question. A simple "No" on the other hand, will usually be more ambiguous because the child is not given specific information for solution.

**Note**: Solving remarks leave little or no initiative with the child to devise his own solutions. They are intrusions upon his independent, autonomous attempts
to solve the problems and to decide whether or not a block placement is correct.
III  POSITIVE SUBCATEGORIES

A. Passive Acceptance; Solicited Acceptance; Solicited Agreement

Remarks which are positive, enhancing, rewarding, or complementary, and are (1) bland, perfunctory, routine or begrudging, or are (2) directly solicited, requested, or demanded. Included are:

1. Positive Remarks of Mild or No Obvious Affect: Perfunctory or terse praise or recognition for task performance. (E.g., "Good"; "There"; "Fine"; "All right"; "O.K."; "Uh-huh"; "Um-hum"; "Not bad"; "Pretty close"; "That's it"; "Close.")

2. Indirect Implications of Competence or Capability: Remarks which imply that the child is competent or will be able to perform the task satisfactorily. (E.g., "This one isn't too bad"; "This looks easy"; "This should be O.K."; "Some kids are smarter than parents.")

3. Solicited Acceptance: Remarks of a positive or enhancing nature, regardless of affect, which are directly, overtly requested. (E.g., "That's fine" in response to: "Is this O.K., Mom?"; "Great!" in response to: "How am I doing?"; "Good" in response to: "O.K.?".) Also included are positive remarks solicited on behalf
of the child by one parent. (E.g., "Fine" by father in response to mother's: "Looks good to me, Dad. How about you?".)

4. Solicited Agreement: Remarks which denote parental agreement with, compliance with, or permission for an idea or behaviour proposed by the child. (E.g., "Yes, that's right" in response to: "Can I put this here?"; "O.K." in response to: "Should I start at the bottom?"; "All right" in response to: "You're supposed to mix up the blocks.") Also included here are positive remarks made in response to a child's overtly verbalizing what he is doing as he performs the task. (E.g., "Uh-huh...Right...Good" in response to: "The white goes here...this goes there...the half one goes here.") Finally, remarks are included which designate agreement with a child's verbalizing of a parent's previous directive. (E.g., Father: "Use white"...Child: "White?"...Father: "Yes.")

5. Solicited Encouragement, Support, or Sensitivity: Remarks designating support, encouragement, or sensitivity to the child's experience, which are directly solicited or requested by the child. These remarks are passive because they are not spontaneous; rather, they are requested. (E.g., "Don't be upset dear" in response to: "I can't
get this stupid thing"; "Take it easy" in response to: "I'll never get this"; "You'll do all right" in response to: "I can't do this.")

6. Parental Agreement with Parental Praise, Encouragement or Sensitivity: Remarks which agree with, reinforce, or "second" a positive, accepting, encouraging, or sensitive remark by the other parent. (E.g., "Yes," in response to: "My, that's good"; "He certainly does" in response to: "You sure do these well"; "Right" in response to "You're doing very well.")

Note: Agreement, permission or acceptance may also carry a clue, hint, or solution to the task depending upon the nature of the child's question. In this case double coding of the response is required (e.g., "Yes" in response to "Does this go here?" would be coded as solicited agreement and as Solving. "Good idea" in response to "Should I start at the bottom?" would be coded as Solicited Acceptance and as "Hinting/Cluing").
POSITIVE SUBCATEGORIES

B. Active Acceptance, Unsolicited Acceptance, Praise, Encouragement

Remarks which are (1) positive, enhancing, or complimentary and are (2) accompanied by obvious, if not intense affect or are (3) spontaneous and not solicited or demanded by the child. Included are:

1. Positive or Enhancing Remarks: Accompanied by obvious affect, enthusiasm, or energy. Positive evaluative statements about the child as a person, the child's behaviour, or his task performance which are delivered with some enthusiasm beyond cursory, perfunctory acknowledgement. (E.g., "Very good"; "Great"; "I'm proud of you"; "You're really good at this"; "That's better than I could do"; "You're getting further than your brother"; "Nothing wrong with you!"; "Wonderful"; "Excellent"; "Terrific"; "Boy oh boy.")

2. Remarks which Provide a Direct, Positive Evaluation: Positive evaluations of the child's competence and capabilities. (E.g., "You'll do this one all right."); "This will be easy for you."; "You're going to have no trouble with this.")

3. Spontaneous Encouragement or Support: Encourage-
ment and support which is not directly requested by the child. (E.g., "Don't worry too much about this."); "Take your time."; "Take it easy."; "Don't get frazzled."; "Just do the best you can."; "It doesn't matter how many you do.")

4. Unsolicited Concern: Sensitivity to child's experience of the task or feelings. (E.g., "You seem upset"; "Frustrated?"; "Getting nervous?"; "Are you O.K.?")

5. Apologies: Remarks which signal the admission of a mistake or to the other in a difference of opinion. (E.g., "I'm sorry"; "I was wrong"; "I take it back.")

6. Defending: Interceding on behalf of the child by a parent in response to the criticism or devaluation by the other parent. (E.g., Father: "Wrong" ...Mother: "He's right"; Mother: "You're not trying"...Father: "Leave him alone.")
IV NEGATIVE SUBCATEGORIES

A. Passive Rejection; Indirect and Solicited Disagreement; Indirect Withholding

Remarks which are apparently, yet not clearly and overtly negative (or else are directly, overtly solicited), and are expressed with mild or no obvious affect. Included are:

1. Solicited Disagreement: Simple disagreement which is directly solicited by the child's overt request. (E.g., "No" in response to: "Is this right?"; "Wrong" in response to: "How does this look to you?"; "I shouldn’t think so" in response to: "Does this go here?"; "You're not done" in response to: "Finished?"; "You're right" in response to: "This isn't it, is it?")

2. Disbelief, Scepticism, Incredulity: Milder forms of disagreement such as indirectly challenging a response. (E.g., "Huh?"; "Are you sure?"; "Is that right?"; "Are you going to accept that?"; "Does that look the same to you?"; "Is that the same?"; "Really?"; "You think so, eh?"; "What's this?"; P: What color is this? C: Red P: Red?")

3. Indirect Withholding Unresponsive Silence: Remarks which indicate an apparent (but not obvious)
refusal to comply with indirect or inferred requests by the child for assistance, support, guidance, encouragement, direction, or reassurance. (E.g., "Keep going" in response to the child's obvious struggling and looking up at parents; "Try harder" in response to "This is hard"; Silence in response to: "I can't get this" or to: "I need help"; Failure to verbalize when the child has successfully completed a design.)

4. **Implied Incompetence:** Remarks at the beginning of a new design which indicate that it will be difficult for the child to successfully complete. (E.g., "That's a doozey"); "Uh oh, look at that one"); "That's going to be tough.").

5. **Agreeing with Disagreement or Criticism:** Remarks by one parent which agree with the other parent's disagreement or criticism. (E.g., "Yeá" in response to: "Wrong"); "Uh-huh" in response to: "You haven't got it yet"); "Listen to Dad" in response to: "Quit fooling around"); "Right" in response to: "You're not even trying, now.")
NEGATIVE SUBCATEGORIES

B. Active Rejection; Unsolicited Disagreement and Criticism; Refusal; Sarcasm

Remarks which are (1) overtly negative, disappointing, or critical; (2) refuse to comply with a direct, overt request by the child; or (3) are sarcastic in nature.

1. Unsolicited Disagreement or Criticism: Remarks which constitute negative evaluative statements about the child, his performance, or his behaviour. These may be of mild or no obvious affect, but are spontaneous. (E.g., "Wrong"; "No"; "I don't think so"; "Not there"; "That's not right"; "Not that one"; "Think"; "You're not looking at the picture"; "You're not trying"; "Don't rush"; "Don't keep turning it"; "Don't start there"; "You should slow down"; "Stop fiddling around"; "You're all thumbs"; "What's wrong with you?"; "What's wrong with that one?"; "What about the hole in the middle?"; "Why have you got that color?")

2. Unsolicited Corrections: Remarks which direct a change in the way the child has placed his blocks. (E.g., "A white shouldn't go there"; "You shouldn't have a red on the corner"; "You need a white, not a red and white there"; "Leave
that alone"; "You had it right the first time"; "Don't change that one"; "This one's wrong";
"You have two changes to make.")

3. **Annoyance, Irritation or Impatience**: Remarks of any content which carry an obviously negative affective component. (E.g., "Harry!"; "Come on!"; "Don't!"; "What are you doing?!"; "Pay attention"; "Get up here!"; "Cut it out!"; "Keep going!"; "Will you listen to me!")

4. **Sarcasm**: (E.g., "Good going" when child drops the blocks; "Very good" when the solution is obviously wrong; "Great" when the child prematurely breaks up the blocks.)

5. **Refusal**: Remarks which overtly refuse compliance to an overt, direct request by the child. (E.g., "No" in response to: "Can you help me?"; "Keep going" in response to: "Can I stop?")

6. **Ignoring and Evading**: Ignoring direct requests for information, assistance or assurance. (E.g., "Maybe you don't have to" in response to: "Should I use all the blocks?"; "Do it and find out" in response to: "Is this one right?")
V HAND GESTURES

A. Touching the Blocks or Manipulating the Child

1. Block Touching: Any tactile contact with the blocks. This includes touching the block or blocks with a finger, grasping the block(s), manipulating the block(s), handing the block(s) to the child, taking the block(s) away from the child, pushing the block(s) toward or away from the child, or holding the block(s) to show it to the child or to look at it more closely.

   Count: Each time a block or blocks are touched. Each contact with a block is counted as one contact and the contact continues until the block is released so that contact is broken. At times a parent will grasp a block and continue manipulating it in his/her hand, or continue manipulating it on the table. As long as contact is not broken this is counted as one contact, regardless of how long the block is manipulated.

   Exclude: Touching the blocks to mix them up at the completion of each design.

   Note: A parent will, at times, touch the block(s) with two hands, hold a block for an extended period
with one hand while picking up and releasing other blocks with the other hand, then the other. In these cases a count is made independently for each hand. That is, count what each hand does.

2. **Manipulating the Child:** Any tactile contact with the child to force or direct his block manipulation. This includes moving his arm or hand toward or away from the blocks, stopping his performance by stopping or restricting his hand movement, or pushing his hand away to see the blocks, point to the blocks or booklet, or to grasp a block.

**Count:** Each instance of the above as one contact. The behaviour ends when the child is released. Prolonged holding of the child without releasing the grasp counts as one contact.

**Exclude:** Both arms around the child's shoulders while manipulating the blocks; moving the child's head to direct his visual attention to some aspect of the task; and stopping him from mixing the blocks or turning the booklet page after a design is completed.
B. Pointing

1. Pointing to either a block, blocks, or the booklet. Pointing begins with the extension of a finger or fingers and ends when the hand is perceptibly withdrawn.

   **Count:** Each instance of pointing from the time of the finger(s) being extended until the hand is perceptibly withdrawn. Pointing which results in obvious lateral (back and forth) or circular movements counts as one point.

   **Note:** Parents will, at times, point from blocks to design to blocks to design etc. in rapid succession. Each different location pointed to is counted.

   In addition, parents will frequently point at, then tap the booklet in rapid succession. The coder will have to subjectively evaluate whether the hand is sufficiently withdrawn to count this event as a single point or as a succession of points.
VI INTONATION

A. General Coding Considerations

1. Filtering: Intonation is coded from electronically filtered tapes which will preclude the coder's comprehending the verbal content of vocalizations. The coder should attend to the paralinguistic features of the vocalizations (e.g., pitch, timbre, intensity, immediacy) rather than the possible verbal content.

2. Unit of Measurement: The unit of measurement is the vocal phrase, which is punctuated by natural pauses in the speaker's verbalizations. Each phrase should be evaluated as falling within one of the three Intonation subcategories.

3. Parent Discrimination: Each parent's is coded separately, so the coder must not begin coding until he/she has been able to isolate the mother's, father's and child's voice characteristics.

B. Positive Intonation

Any vocalized phrase which is perceived by the coder as indicating "pleasure," "enthusiasm," or "reward."

C. Negative Intonation

Any vocalized phrase which is perceived by the coder
as indicating "displeasure," "disappointment," or "punitiveness."

D. **Neutral Intonation**

All vocalized phrases which are perceived by the coder as not compelling categorization as either positive or negative.
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