

ABSTRACT

Title of Document: THE RELATIONS OF CHILDREN'S
PERCEIVED SUPPORT FOR
RECREATIONAL READING FROM
PARENTS AND FRIENDS TO THEIR
MOTIVATION FOR READING

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Development

This study investigated children's perceived support for their recreational reading from their mothers, fathers, and friends in relation to their reading motivation and habits. Models from the reading domain, including the engagement model of reading (Guthrie & Wigfield, 2000) and McKenna's (1994) model of reading attitude acquisition guided the study, as well as theories from the broader study of motivation, including self-determination theory (Ryan & Deci, 2000a) and expectancy-value theory [Eccles (Parsons) et al., 1983]. The study focused on children in the upper elementary grades, as relatively little research has examined the role that socialization agents play in this age group's reading motivation and activity.

Participants, who included 130 fourth-graders and 172 fifth-graders, completed the newly developed Reading Support Survey (RSS) and surveys of their reading motivation and habits. Scores on three reading achievement indicators were obtained.

Seven hypotheses were tested, six of which were partially or fully substantiated. Paired sample comparisons that examined individual RSS items indicated that children perceived greater reading support from their mothers than their fathers and friends in several regards. Factor analysis demonstrated the multidimensionality of perceived reading support. Four dimensions were apparent, but differed from those predicted in that support type was an organizing element as much as support source. Girls perceived greater friend support than boys, and fourth-graders reported receiving more books as presents than fifth-graders. Girls and fourth-graders showed somewhat more positive profiles of reading motivation and frequency. Each of the four dimensions of reading support correlated significantly with at least three of five reading motivation dimensions and three of four reading frequency variables studied. Moreover, multiple regression analyses indicated that parent and friend support contributed uniquely to the prediction of reading motivation and frequency, controlling for reading achievement, gender, and grade level. Additionally, cluster analysis indicated that participants could be grouped into five clusters based on their profiles of reading support; further analyses showed how these clusters differed in reading motivation and frequency.

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RECREATIONAL READING FROM PARENTS AND FRIENDS
TO THEIR MOTIVATION FOR READING

By

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2008

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Dedication

In memory of my dad, Matthew Lutz, who supported me in my reading – and everything else.

Acknowledgements

To Dr. Allan Wigfield – my deepest thanks for the ideal balance of freedom and guidance you provided throughout my time as a doctoral student. I am also tremendously grateful for the detailed and swift feedback you provided in all stages of the dissertation process, your continual generosity with your time, and your expressions of confidence and interest in me and my work. I truly feel lucky to have had you as my mentor.

To Drs. John Guthrie, Kathy Wentzel, Linda Baker, and Jean Dreher – thank you for the time and energy you devoted to reviewing my work. Your varied perspectives and insights greatly strengthened this study by challenging me to extend and clarify its theoretical basis as well as my measurement and analysis plans. John, I also must thank you for ensuring I had much else to do and think about besides this dissertation!

To my CORI and REAL teammates throughout the years, who offered constructive criticism, an abundance of encouragement, wisdom from their own experiences, and plenty of welcome distractions – thank you for making UM a stimulating and fun place to be.

To my family (‘old’ and ‘new’) and my friends from home – the completion of this dissertation is due in no small part to your loving support of my endeavors, the models you provide of persistence and commitment, and the value you continue to encourage me to place on education and reading of all kinds.

And to Jeff, my husband as well as my personal computer technician, statistical consultant, chef, and confidant – infinite thanks for your immeasurable contribution to this dissertation.

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Chapter 1: Introduction

How does a child develop into an adult who loves to read? Much research has addressed this question by examining the role that parents play in helping preschool and primary-grade children become interested in reading and develop beginning reading skills. For example, many parents attempt to support their young children's beginning motivation for reading by creating home environments that offer them a rich variety of reading and writing materials and by reading aloud with them frequently in a warm, interactive manner. And there is indeed empirical evidence that these particular actions contribute positively to young children's reading motivation, as well as their early reading skills (Baker & Scher, 2002; Baker, Scher, & Mackler, 1997; Sonnenschein, Baker, Serpell, & Schmidt, 2000).

The extent, however, to which parents attempt to support their children's reading activities as they proceed beyond the primary grades has not received nearly as much attention. Neither has the extent to which parents' efforts relate to older children's reading motivation (Baker et al., 1997; Klaua, 2006). The role of peers in older children's reading also has undergone little examination, despite the increasingly prominent role in general that peers play in children's lives as they grow older (Rubin, Bukowski, & Parker, 2006; Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2006). Therefore, the current study focused on older children's perceived social support for reading from their parents and peers. The instrumental type of social support, which has been defined in several ways but essentially includes behavioral involvement and material assistance, was the primary form of support examined (Malecki & Demaray, 2003; Tardy, 1985). Some items used herein to measure reading support might be

construed as other types of support, though, as they reflected general encouragement and approval of reading, as opposed to more direct, tangible involvement in it.

The possible relations between reading support and older children's reading motivation and reading frequency were especially of interest, given that children's amount of recreational and academic reading and several aspects of their motivation for reading and language arts, such as their attitudes, values, and competence beliefs, frequently have been reported to decline with age (Duchain & Mealey, 1993; Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002; McKenna, Kear & Ellsworth, 1995). That is, a better understanding of how reading support and reading motivation and frequency are related may hold practical implications for those who want to help older children remain or become avid readers. It should be noted that the study focused on reading as a recreational activity because relatively few studies have examined the role that parents and others may play in fostering children's participation in specific free-time activities during middle childhood; yet research has demonstrated that children's recreational activities during middle childhood influence their motivation, cognitive abilities, and choices in the domains of those activities in both the short- and long-term future (Simpkins, Davis-Kean, & Eccles, 2005).

More specifically, this study examined upper elementary school-aged children's perceptions of support for reading as a recreational activity from their mothers, fathers, and friends. It also examined the relations of this perceived support to several aspects of the focal children's reading motivation and recreational reading frequency using both variable-centered (correlation and regression) and person-centered (cluster) types of analyses (Murdock & Miller, 2003). The former were employed to show the individual

and unique relations of different perceived reading support variables with different aspects of reading motivation and frequency. To complement this type of analysis, cluster analysis was employed to provide a view of the actual contexts children experienced with regard to perceived reading support, that is, to determine what profiles of perceived reading support existed in the sample and how the profiles related to children's reading motivation and frequency. In addition, the study investigated whether there are gender differences in children's perceived reading support, and in the relations between perceived support and reading motivation and frequency, given previous research demonstrating that girls often indicate greater motivation for reading both as a recreational activity and as a school subject than do boys (e.g., Baker & Wigfield, 1999; Jacobs et al., 2002; McKenna et al., 1995). Lastly, grade-level differences in perceived reading support were also of interest, given that the sample included both fourth- and fifth-graders and much research has reported declines in reading motivation, including its social dimension, and frequency with age (e.g., Baker & Wigfield, 1999; McKenna et al., 1995; Wigfield & Guthrie, 1997).

For the study, I created a new measure called the Reading Support Survey (RSS). It is different from measures used in most other studies of the social aspects of children's reading in that it taps children's perceptions of support, rather than others' reports of the support they provide, because the former may be more closely related to children's motivations (Bouchey & Harter, 2005; Murdock & Miller, 2003). In addition, the survey is unique from other measures used to study social factors in children's reading – but follows a trend in research on children's general academic motivation (e.g., Furrer & Skinner, 2003; Murdock & Miller, 2003; Wentzel, 1998) – in that it separately assesses

children's perceptions of different socialization agents. The construction process of this questionnaire, which involved a pilot test of a preliminary version of it in December 2005, is described in Chapter 3. Further analysis and refinement of the measure was also part of the purpose of the current study.

In this study, Guthrie, Wigfield, and colleagues' research (e.g., Guthrie & Wigfield, 2000; Wigfield & Guthrie, 1997; Baker & Wigfield, 1999) provided the basis for the conceptualization of reading motivation. In defining and measuring reading motivation, they have drawn upon constructs from several theories of achievement motivation (e.g., self-determination theory, Deci & Ryan, 1985; self-efficacy theories, Bandura, 1977; Schunk, 1991), and have concluded that it is a multidimensional construct. That is, they have found that children have a variety of motivations for reading (or not reading), including but not limited to their beliefs about reading and themselves as readers, how valuable they find reading, and the kinds of goals they might satisfy through reading. I likewise viewed reading motivation in a multidimensional manner, and therefore assessed several motivations, namely the extent to which children: (a) have *efficacy* beliefs and like *challenges* in reading, (b) have *knowledge goals* for reading and place *interest* value on it, (c) believe they have *autonomy* in reading, (d) have goals that include *competition* with others in reading, and (e) have goals that include achieving *recognition* through reading. Each of these reading motivation dimensions – self-efficacy/challenge, knowledge goals/interest, autonomy, competition, and recognition – have been measured in previous studies conducted by Guthrie, Wigfield, and colleagues (e.g., Baker & Wigfield, 1999; Wigfield & Guthrie, 1997). These motivations are discussed in much more detail in Chapter 2.

Guiding Theory and Research

Two broad areas of study guided this dissertation: (1) theories and research concerning children's experiences of support for and interactions with others specifically in the domain of reading, and (2) research focused on the roles that parents and peers play in the development of children's achievement motivation more generally. From the broader achievement motivation field, studies that simultaneously examined children's perceptions of support from multiple socialization agents were especially of interest, given that a purpose of the study was to do so in the domain of reading, which has rarely been done in previous studies focused on reading. In a sense, then, one aim of this dissertation was to create a link between the two areas of study identified here.

Accordingly, theories prominent in both areas of research identified above comprised the theoretical framework for this study. Two models that are specific to the reading domain, namely McKenna's model of reading attitude acquisition (McKenna, 1994; McKenna et al., 1995) and Guthrie and Wigfield's engagement model of reading (e.g., Guthrie & Wigfield, 2000; Guthrie, Wigfield, & Perencevich, 2004) provided the general framework. From the broader achievement motivation field, quite a number of theories could apply, but two seemed to hold the potential to provide particular insight into how children develop reading motivation, namely Ryan and Deci's self-determination theory (e.g., Deci & Ryan, 1985; Ryan & Deci, 2000a) and Eccles, Wigfield, and colleagues' expectancy-value theory [e.g., Eccles (Parsons) et al., 1983; Wigfield & Eccles, 2000]. Below I outline the basic premises of these theories and their relation to the current study. In Chapter 2, I elaborate further on these theories and the empirical work that guided the design of this study.

McKenna's model of reading attitude acquisition (McKenna, 1994; McKenna et al., 1995) indicates that three factors directly influence one's attitude or system of feelings toward reading, which in turn affects one's decision to read or continue reading. These three factors include one social factor and two non-social factors, which may all interact with each other. The two non-social factors are one's own past reading experiences and one's beliefs about the outcomes of reading, such as whether reading will lead to positive experiences like pleasure and rewards or negative experiences like boredom and failure. The direct social factor in the model is normative beliefs, or one's beliefs about how much significant others in one's life value reading. In line with this factor of the model, the current study focused on children's perceptions of support rather than others' reports of the support they provide, which could differ substantially.

The other reading-specific theory guiding this study was Guthrie and Wigfield's engagement model of reading (e.g., Guthrie & Wigfield, 2000; Guthrie, et al., 2004). In a sense, this model provided the basic premise for the study because it posits that social interaction in reading is one of four defining characteristics of engaged readers. The other defining characteristics are cognitive, behavioral, and emotional involvement in literacy activities. As stated by Guthrie et al. (2000), engaged readers "connect their reading with their friendships and their leisure time...engagement is a network of bonds among skills, strategies, knowledge, and motivation, in the social community," (p. 209). This model, therefore, grounded the current study through its implication that to fully understand how children become thoughtful, avid, willing readers it is beneficial to examine who children interact with around reading and how they interact with them, and how these interactions affect them. It is important to acknowledge that these social exchanges might be

stimulated by both the child and by other people. While the measure employed in this study inquires about behaviors engaged in by other people, these behaviors might or might not be actions taking place in response to the focal children's behaviors and attributes.

The engagement model of reading is related to several broader theories that concern the development of motivation, which, according to Guthrie and Wigfield (2000, p. 405) "is the foundational process for reading engagement." Self-determination theory (SDT) is one of those theories that is particularly relevant to the current study. At the broadest level, SDT theorists propose that individuals are most positively motivated when they feel they are autonomous agents in their own behaviors and thus are intrinsically motivated to engage in their activities (Ryan & Deci, 2000a). This theory includes the idea that significant others in children's lives may play a key role in catalyzing their intrinsic motivation, or drive to do things for internal reasons, like enjoyment and interest, rather than external reasons, like receipt of a reward or privilege. Moreover, significant others play a key role in facilitating children's internalization and integration of values and behaviors that they do not find intrinsically motivating into their self system. These processes take place when the significant others, or socialization agents, support children's three basic needs of competence, relatedness, and autonomy, by providing some structure for their activities and becoming involved in them, but not being too controlling (Grolnick, Gurland, Jacob, & Decourcey, 2002; Ryan & Deci, 2000a).

With regard to reading, then, SDT implies that when children recognize that their parents, peers, and other important figures in their lives value reading and support their

reading endeavors, they will personally develop the sense that reading is a worthwhile activity (Guthrie & Davis, 2003; Ryan & Deci, 2000a). This theory, like McKenna's model (McKenna, 1994; McKenna et al., 1995), suggests the significance of children's perceptions, which, again, are central in this study. In addition, this theory particularly offers insight into *how* others may bear influence on children's motivation. It should be noted that since reading is not an intrinsically motivated activity – that is, people are not born with a tendency to read (although it might be argued that reading is a means by which people demonstrate their innate curiosity) – SDT's tenets regarding internalization of values are more applicable to the present study than those regarding facilitation of intrinsic motivation.

Expectancy-value theory [EVT; e.g., Eccles (Parsons) et al., 1983; Wigfield & Eccles, 2000] is another theory that influenced the engagement model of reading, and the focus and design of this study. In the model representing EVT, children's subjective task values and expectancies for success are depicted as direct influences on their achievement-related choices. One central part of this model is a depiction of how children's subjective task values and expectations for success are socialized. Eccles and her colleagues state that children's perceptions of others' beliefs, expectations, and attitudes about them, as well as their perceptions of gender roles and activity stereotypes, are important influences on children's expectancies and values. Antecedent to these perceptions are socializers' beliefs and behaviors relevant to particular activities and the cultural milieu, which includes gender role stereotypes and cultural stereotypes of subject matter and occupational characteristics (Wigfield & Eccles, 2000). Thus, this model also grounded the focus on children's perceptions of others in this study.

Moreover, findings from a number of studies guided by EVT grounded the investigation of whether there are gender differences in perceived reading support, especially from parents, in this study. Previous research guided by this theory has revealed gender differences in children's motivation for several activity domains (e.g., Eccles, Wigfield, Harold, & Blumenfeld, 1993; Wigfield et al., 1997), and linked these differences, particularly in the domains of math and science, to parents' gender-typed beliefs and behaviors [e.g., Eccles (Parsons), Adler, & Kaczala, 1982; Jacobs, Davis-Kean, Bleeker, Eccles, & Malanchuk, 2005]. A few studies concerning parent influence on children's motivation included the reading domain in addition to other domains, but in contrast to the current study, they focused more on parents' beliefs than their behaviors (e.g., Frome & Eccles, 1998). It is important to note, too, that the current study focused on motivation constructs based in this theory and additional constructs not specifically included in the theory. Thus, for instance, finding that socialization agents are perceived as differentially supporting girls and boys in reading and that the gender which perceived more support showed greater motivation would align with EVT, but not specifically be a test of it.

Purpose and Significance of the Study

In sum, guided by theory and research regarding the socialization of children's motivation both for activities in general and for reading in particular, this study aimed to extend understanding of the reading support experienced by children beyond the primary grades. Specifically, the study utilized a newly developed measure, the Reading Support Survey, to examine children's perceived support for recreational reading from their mothers, fathers, and friends. Perceived support from these socialization agents was

analyzed in relation to indicators of children's reading motivation and recreational reading frequency. This explicit comparison of children's perceptions of parents and peers makes the study distinct from previous research on children's experiences of support for their reading. Another distinct facet of the study was the use of cluster analysis to group children based on patterns of support from their parents and friends. The data was also analyzed for gender and grade level differences in perceived support and reading motivation and frequency and in the relations between these sets of variables. Lastly, the findings of this study hold implications for further refining the Reading Support Survey.

The practical significance of the present study relates to the evidence that children become less motivated to read and read less frequently as elementary school progresses and at least into the middle school years. This study was designed to offer insights into how and to what extent parents and peers might help sustain or stimulate older children's reading motivation. Reading motivation itself is important due to its links with reading comprehension; that is, motivation appears to increase reading amount, which in turn appears to increase reading comprehension (Guthrie, Wigfield, Metsala, & Cox, 1999), a skill that becomes increasingly critical to academic success as children grow older (Chall, 1983) and that is crucial for performance in many occupations, pursuit of hobbies, and gaining an appreciation of others' viewpoints (Guthrie, McGough, Bennett, & Rice, 1996).

The study also contributes to the broader developmental literature on the socialization of motivation. As contended by Bouchey and Harter (2005), "The perceived social realm...represents an important yet understudied context for exploring the

development of motivation” (p. 684). Further, they noted that studies on the socialization of motivation have mostly examined one type of socialization agent at a time and that studies that examine perceptions of peers have primarily been domain-general. Thus, the current study, with its comparison of children’s perceptions of three types of socialization agents and its focus specifically on the domain of reading, takes a step in a direction deemed worthwhile for motivation research in general.

Hypotheses

To increase understanding of the role that socialization agents play in older children’s reading, this study tested seven hypotheses. The theories and research cited here as providing the basis for each of the hypotheses are described more fully in Chapter 2.

Hypothesis 1: Children will distinguish their mothers, fathers, and friends as distinct sources of support for their recreational reading. This hypothesis reflects previous studies of children’s and adolescents’ perceptions of general social support in which specific source of support (e.g., parent, teacher, classmate, friend) was a stronger organizing element than general source of support (e.g., adults, peers) or type of support (e.g., instrumental, informational, emotional, appraisal; Malecki & Demaray, 2002; Malecki & Elliott, 1999; Robinson, 1995). It also aligns with the findings of my pilot study, in which distinct mother, father, and best friend factors emerged.

Hypothesis 2: Children will perceive higher levels of reading support from their mothers than from their fathers or friends. This hypothesis aligns with previous research indicating that both mothers and fathers viewed mothers as the more involved parent in their adolescent sons’ recreational reading activities (Love & Hamston, 2004) and that

children most frequently cited their mother as the person who got them most interested in and excited about reading (although they did more frequently cite their friends as an influence on their book choices; Edmunds & Bauserman, 2006). It also aligns with studies of support in specific domains like math and science (Bouchey & Harter, 2005) and of social support in general (Robinson, 1995) indicating that children and adolescents perceive more support from their mothers than from their fathers or peers. This hypothesis also reflects pilot study findings which indicated that mother support was greater than father support and greater than best friend support.

Hypothesis 3: Regarding levels of perceived reading support, reading motivation and frequency, (a) girls will perceive greater reading support and show a more positive profile of reading motivation and frequency than boys, and (b) fourth-graders will report higher reading support, reading motivation, and reading frequency than fifth-graders.

The first part of this hypothesis was based on previous research in which elementary school-aged girls scored higher on the social dimension of reading motivation, which reflects students' tendency to interact with family and friends in reading and their enjoyment of that interaction (Baker & Wigfield, 1999; Wigfield & Guthrie, 1997) and received more encouragement to engage in reading activities than boys, according to parent data (Harold, Eccles, Yoon, Aberbach, & Freedman-Doan, 1991, as cited in Eccles, 1993). It also coheres with a number of studies which showed that girls feel more competent in reading, value it more, have more positive attitudes toward it, and read more often than boys (e.g., Baker & Wigfield, 1999; Jacobs et al., 2002; McKenna et al., 1995). Lastly, it is in accord with pilot study findings that girls perceived greater reading

support from their mothers and scored more positively on several dimensions of reading motivation and book-reading frequency.

The second part of this hypothesis was based on research indicating that generally children's reading motivation, attitudes, and activity appear to decline during the elementary years. There is, however, mixed evidence regarding whether children only one grade level apart show differences in these variables (Kush & Watkins, 1996; McKenna et al., 1995; Wigfield & Guthrie, 1997), so differences between grade levels are not expected to be extensive in the current study. For example, Wigfield and Guthrie found that, out of 11 reading motivations, fourth-graders scored higher than fifth-graders on the efficacy, recognition, and social dimensions of reading motivation at one time point, but not at another. Also, there is less empirical basis for predicting age differences in perceived reading support than reading motivation and frequency.

Hypothesis 4: When perceived mother, father, and friend support for reading are examined individually, they will each relate positively to the intrinsic reading motivation dimensions of autonomy and knowledge goals/interest, to competence beliefs in reading (the reading motivation dimension of efficacy/challenge) and to reading frequency. This hypothesis was derived from SDT (Ryan & Deci, 2000a). According to SDT, interactions with parents and other socialization agents may facilitate children's development of motivations similar to intrinsic motivation (but not true intrinsic motivation) for an activity and their engagement in the activity if the interactions provide autonomy and competence support. Also, the child must feel a sense of relatedness to those encouraging the activity. Reading support, as defined in the present study, includes behaviors that may support children's autonomy and competence, especially if the child frequently

experiences them. Frequent experience of reading support would also represent a high degree of involvement by others, which if it takes place in an affectively positive context, should add to children's feelings of relatedness, and thus their motivation. Pilot study findings provide some support for this hypothesis, as support from one or more of the sources under study related positively to autonomy, knowledge goals/interest, efficacy/challenge and each reading frequency variable studied.

Hypothesis 5: When perceived mother, father, and friend support for reading are examined individually, they will each relate negatively to the extrinsic reading motivation dimensions of competition and recognition. This hypothesis was also derived from SDT, which asserts that extrinsic motivation is characteristic of individuals whose needs for autonomy, competence, and relatedness are not well-satisfied (Ryan & Deci, 2000a), which in the terms of the current study would mean children who perceive low levels of reading support. Students who perceive low reading support may especially see competing with others in reading and striving for recognition in reading as a way to gain the positive attention to their reading that they are lacking.

Hypothesis 6: When perceived mother, father, and friend support for reading are examined in combination with each other (a) mother support will relate most strongly to children's reading motivation and frequency, but (b) perceived father and friend support will also contribute significantly to reading motivation and frequency. The first part of this hypothesis coheres with research showing that more mothers than fathers of motivated adolescent readers reported valuing fiction reading (Love & Hamston, 2004), that discussion of reading was a practice always established in the homes of avid readers, rather than amongst friends (Strommen and Mates, 2004), and that domain-specific

support from mothers and fathers correlated more strongly with motivation than support from peers for that domain (Bouchey & Harter, 2005). This hypothesis also aligns with pilot study findings that mother support correlated significantly with more aspects of reading motivation and frequency than did father or best friend support, and that the correlations involving mother support were greatest in magnitude. The second part of the hypothesis was based on studies from the general academic and math/science domains indicating that multiple support sources sometimes contribute additively to the same motivation variables and sometimes relate distinctly to different motivation variables (e.g., Furrer & Skinner, 2003; Marchant, Paulson, & Rothlisberg, 2001; Murdock & Miller, 2003; Simpkins et al., 2005; Wentzel, 1998).

Hypothesis 7: When perceived mother, father, and friend support are employed as grouping variables in cluster analyses (a) at least four groups of children will be apparent and (b) these groups will differ significantly in their levels of reading motivation and frequency. Children that perceive high levels of support from each socialization agent will show the most positive profiles of reading motivation and frequency, and those that perceive mixed levels of support will show more positive profiles of reading motivation and frequency than those perceiving low levels of support from each socialization agent. This hypotheses reflects pilot study findings that four clusters were present in the sample, and that these clusters showed different profiles of reading motivation and frequency, such that the number of persons from whom the child received high (or low) support appeared to matter more than the type of person. It should be emphasized, however, that these findings are considered highly tentative, given both the exploratory nature of cluster analysis in general (Hair, Black, Babin, Anderson, &

Tatham, 2006) and the fact that in the pilot study two of the clusters were too small to analyze for statistically significant differences in reading motivation and frequency. The hypothesis does, though, also align with others' findings, like that of Simpkins et al. (2005), who focused on a recreational activity domain, and Furrer and Skinner (2003), who focused on school in general. In both these studies, the number of sources of high support or relatedness was positively associated with activity and engagement.

Definitions

The following definitions are offered to clarify the use of key constructs and terms in this dissertation.

Autonomy: Reading motivation dimension representing individuals' enjoyment of and preference for making decisions about their reading activities.

Competition: Reading motivation dimension representing the extent to which individuals read in order to demonstrate superiority to classmates and friends in reading.

Efficacy/challenge: Reading motivation dimension representing individuals' beliefs that they are skilled in reading and enjoy reading long or otherwise challenging materials.

Knowledge goals/interest: Reading motivation dimension representing the extent to which individuals read for the purpose of learning new information and the extent to which they enjoy reading for that purpose.

Older children: Refers to children in the upper elementary grades and higher.

Reading: The activity of decoding written language in order to derive meaning from it (Carroll, 1985). Includes but is not necessarily limited to decoding and deriving meaning from the text of books, magazines, newspapers, and web sites.

Reading attitude: “A system of feelings related to reading which causes the learner to approach or avoid a reading situation,” (Alexander & Filler, 1976, p.1, as cited in McKenna, 1994) which aligns with greater reading motivation, if positive (Baker & Wigfield, 1999).

Reading engagement: Emotional or affective, cognitive, and behavioral involvement in and commitment to reading and a community of literacy (Fredricks, Blumenfeld, & Paris, 2004; Guthrie et al., 2000; Guthrie & Wigfield, 2000). This term is used in the literature review of Chapter 2 to encompass the variety of constructs that researchers have examined as potential affective, behavioral, and cognitive correlates or outcomes of reading support. Alternatively, *engaged readers* are individuals who show four main qualities related to reading: they are motivated, effectively use comprehension skills and strategies, are knowledge-driven, and socially interactive (Guthrie, 2004).

Reading motivation: A multidimensional construct including “The individual’s personal goals, values, and beliefs with regard to the topics, processes, and outcomes of reading,” (Guthrie & Wigfield, 2000, p. 405). The dimensions include but are not limited to self-efficacy/challenge, knowledge goals/interest, autonomy, competition, and recognition (Baker & Wigfield, 1999; Wigfield & Guthrie, 1997).

Reading support: Behaviors and statements that reflect involvement in and approval or encouragement of another’s reading activities; instrumental support for reading (Malecki & Demaray, 2003). The behaviors and statements may or may not be emitted with the intention of affecting another’s reading motivation. See Table 1 in Chapter 2 for examples.

Recognition: Reading motivation dimension representing the extent to which individuals enjoy having parents, teachers, and friends acknowledge their reading.

Recreational reading: Any reading that is not required for school or work. Used synonymously with *leisure reading*.

Social support: “an individual’s perceptions of general support or specific supportive behaviors (available or enacted upon) from people in their social network, which enhances their functioning and/or may buffer them from adverse outcomes,” (Malecki & Demaray, 2002, p. 2). Often categorized into different types, such as instrumental, emotional, informational, and appraisal (Malecki & Demaray, 2002), or emotional support, instrumental aid, and approval (Robinson, 1995).

Chapter 2: Literature Review

As mentioned in Chapter 1, this dissertation was guided by theories and research specific to the domain of reading, as well as by the broader achievement motivation literature. In this chapter, I present a review of this literature, divided into four major sections. The first section expands on the theoretical framework that was introduced in Chapter 1, which includes two reading-specific theories, McKenna's model of reading attitude acquisition (McKenna, 1994; McKenna et al., 1995) and Guthrie and Wigfield's engagement model of reading (Guthrie & Wigfield, 2000; Guthrie et al., 2004), and two theories from the broader motivation literature: Self-determination theory (SDT; Ryan & Deci, 2000a) and expectancy-value theory [EVT; Eccles (Parsons et al., 1983; Wigfield & Eccles, 2000)]. The second section presents a practical rationale for examining the role of socialization agents in the reading engagement of older children based on research showing how children's reading motivation and practices often change as they grow older. The third section reviews research in the reading domain that has focused on children's support from and interactions with others in reading. It starts with a brief summary of the relations between young children's reading engagement and the support for reading they receive from their parents, which provides a backdrop for the deeper discussion of older children's experiences of reading support that follows it. The last section of the review focuses on studies that compared children's perceptions of support from multiple socialization agents in areas other than reading, including several studies that related these perceptions to children's motivation in the focal domains. This section also briefly discusses studies from the broader child development literature that examined both multiple sources and multiple aspects of social support.

Theoretical Framework

Theories Specific to the Domain of Reading

Overview. Many of the empirical studies concerning the role that parents and other socialization agents play in children's reading that are discussed in a later section of this review were tied to general theories and ideas regarding socialization. Very few studies, on the other hand, appeared to have an explicit basis in models that give attention specifically to the socialization of reading practices. This is somewhat surprising given that McKenna (McKenna, 1994; McKenna et al., 1995) and Guthrie and Wigfield (Guthrie & Wigfield, 2000; Guthrie et al., 2004) have both developed theoretical models that give considerable attention to the role of social factors in the development of one's attitudes about, frequency of, and motivation for reading. But it is important to note that these models do not focus solely on the socialization aspect; they both consider an array of other characteristics and experiences that influence children's involvement in and feelings about reading. In the following discussion, however, emphasis is placed upon the social aspects of these models.

McKenna's model of reading attitude acquisition. McKenna's model of reading attitude acquisition (McKenna, 1994; McKenna et al., 1995) specifies three factors that directly influence one's reading attitude, as well as several indirect paths through which it may be affected. In turn, reading attitude is depicted as affecting one's decision to read or continue reading, and this decision as indirectly feeding back to influence one's reading attitude. Two of the direct factors in the model reflect relatively personal, versus social, influences on one's reading attitude. One of these factors is one's own past reading experiences. As McKenna (1994) stated, this factor "involves immediate impact on

attitude without the cognitive mediation of belief change,” (p. 35). The other is one’s beliefs about the outcomes of reading, such as whether reading will lead to positive experiences like pleasure and rewards or negative experiences like boredom and failure. Both these factors predict that with many successful, interesting, and useful interactions with text, one’s attitude toward reading should improve over time, and with the converse experiences, that one’s attitude toward reading will worsen over time.

The third direct factor in McKenna’s model (McKenna, 1994, McKenna et al., 1995) represents normative beliefs, or one’s beliefs about how much significant others in one’s life value reading. Importantly, this factor includes consideration of whether one tends to conform with others’ values. For example, if a child perceives that his or her peers value reading, and he or she likes to conform with their beliefs, then peers may bear a positive influence on the child’s reading attitude; however, if a child perceives that others, like his or her parents, value reading but the child is not motivated to conform with their beliefs, then their value for reading may have no bearing, positive or negative, on the child’s reading attitude. In other words, this factor implies that the extent to which perceived support for reading is related to aspects of reading motivation may vary considerably for different supporters. This is one reason why the present study seeks to compare the relations of perceived support from different types of socialization agents with children’s reading motivation.

In addition, the model of reading attitude acquisition (McKenna, 1994; McKenna et al., 1995) includes indirect influences on reading such as the social structure and the environment more broadly conceived. For example, parents might indirectly influence their child’s reading by setting up a bookshelf containing a number of books and

magazines related to their child's interests in sports, art, or other areas. According to McKenna's model, this environmental feature might foster the child's intention to read these materials, which in turn might result in the child actually reading them, which would contribute ultimately to the child's overall attitude toward reading. This aspect of the model influenced the inclusion of provision of reading materials in the definition of reading support employed herein.

With respect to empirical backing for the model, in his original presentation of it, McKenna (1994) identified an array of studies that supported the various paths included in the model. Since the introduction of the model, researchers have focused primarily on how reading attitudes relate to age, gender, and ethnicity (e.g., McKenna et al., 1995; Kush & Watkins, 1996; Kush, Watkins, & Brookhart, 2005), and not on the direct and indirect factors that McKenna proposed affect reading attitude, although McKenna et al. (1995) contended that gender differences in children's reading attitudes reflect differential socialization of reading. Thus, the current study is a bit different from other research guided by McKenna and colleagues work in that it aims to examine the relation of an environmental feature (reading support) to children's reading motivation more directly. Furthermore, various aspects of motivation, rather than attitude, are variables of interest.

Guthrie and Wigfield's engagement model of reading. The second reading-specific theory grounding this study, Guthrie and Wigfield's engagement model of reading (e.g., Guthrie & Wigfield, 2000; Guthrie et al., 2004), contends that engaged readers are defined by four major characteristics: they effectively use reading comprehension strategies, are knowledge-driven, are highly motivated to read, and

regularly interact with peers, family members, and others in reading activities. Furthermore, Guthrie and Wigfield (2000) asserted, “Although the cognitive and social dimensions of engaged reading are distinguishable from the motivational dimension, engagement cannot occur without all three” (p. 404). By the stress given to social interaction in reading as a key trait of engaged readers, this model underscores the idea that examining the nature and extent of these interactions may provide insight into how to help children who struggle to engage with text. The current study aligns with this implication by investigating children’s perceived reading support from their mothers, fathers, and friends.

In addition, according to the engagement model (e.g., Guthrie & Wigfield, 2000; Guthrie et al., 2004), reading engagement is closely linked with reading achievement and comprehension, with the motivation component of engagement being especially important in this relationship. According to Guthrie and Wigfield (2000), reading motivation is a multidimensional construct that activates frequent, effortful reading, which enables children to improve their comprehension, and better comprehension feeds back to increase reading motivation. Further, they point out that reading attitude is different from motivation, in that the former essentially represents liking for a task, while the latter is a broader construct that encompasses the variety of reasons one may or may not engage in reading. As mentioned in the introduction, I adopted this perspective for the current study, and thus assessed five reading motivations previously studied by Guthrie, Wigfield, and colleagues: efficacy/challenge, knowledge goals/interest, autonomy, competition, and recognition. Below, I define each of these motivations constructs, and

later in the section outlining SDT, I discuss theoretically how and why they may relate to children's experiences of reading support.

The dimension of efficacy/challenge represents children's beliefs that they are skilled in reading and enjoy reading long or otherwise challenging materials. It reflects Bandura's (1977, 1989) conceptualization of self-efficacy, one's belief in his or her capability to reach a certain level of performance on a task, as a powerful determinant of whether or not someone will choose to spend time and effort on a task, and whether they will ultimately succeed at it. According to a review by Schunk and Zimmerman (1997), self-efficacy in the domain of reading is linked to children's persistence on difficult reading tasks. A similar construct, expectations of success, is directly linked in the EVT model to children's activity choices [Eccles (Parsons) et al., 1983; Wigfield & Eccles, 2000]. Also, the dimension of self-efficacy/challenge is related to Ryan and Deci's (2000a) construct of competence, which they contend is one of three psychological needs; Ryan and Deci contend that individuals are more likely to engage willfully in activities at which they believe they are skilled. While efficacy and challenge are distinct reading motivations in the sense that one might feel confident in their reading ability but not necessarily enjoy being challenged in reading, these dimensions tend to be highly related and have previously been placed in the same broader category of motivations (Baker & Wigfield, 1999; Wigfield, 1997).

Knowledge goals/interest represents the extent to which children read for the purpose of learning new information and the extent to which they enjoy reading for this purpose. It is very similar in meaning to the construct of curiosity studied by Wigfield and Guthrie (1997) and Baker and Wigfield (1999), and could be categorized as an

intrinsic motivation (Ryan & Deci, 2000a), because it partly reflects reading for the inherent satisfaction that comes from learning new things. This dimension is also related to the interest or intrinsic component of task values in EVT; this component represents how much one likes an activity and is a direct influence on activity choices in the EVT model [Eccles (Parsons) et al., 1983; Wigfield & Eccles, 2000]. In addition, knowledge goals/interest is linked to the achievement goal literature concerning learning or mastery goals (Ames, 1992; Dweck & Leggett, 1988). Like efficacy and challenge, knowledge goals and interest are considered separate motivation dimensions because one could have a strong interest in or liking of a subject, but not act on that interest, that is, not actually pursue it as a knowledge goal; however, empirically, the learning goal orientation and interest tend to be highly related (e.g., Alao & Guthrie, 1999; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000).

Next, autonomy represents children's enjoyment of and preference for making decisions about their reading activities. Guthrie et al. (2007) studied this construct, which they also described as perceived control, through interviews with fourth-grade children. In the interviews, children high in autonomy asserted that they would rather pick their own books than have adults choose them and described strategies for finding their own books. According to SDT (Ryan & Deci, 2000a), which is discussed in more detail later, autonomy, or having a sense of personal control over one's behaviors, is one of three human psychological needs. In this theory, the more autonomous people feel about an activity, the closer they are to having true intrinsic motivation for it. Autonomy reflects the fullest internalization of others' or society's values into one's sense of self.

Lastly, the dimensions of competition and recognition represent extrinsic motivations for reading, or engagement in an activity because of some tangible reward or other benefit associated with it (Deci & Ryan, 1985, Ryan & Deci, 2000a). Specifically, competition represents reading in order to demonstrate superiority to classmates and friends in reading, while recognition represents the enjoyment that may come from having parents, teachers, and friends acknowledge that one reads well. These dimensions reflect the fact that children's reading performance is often compared by their teachers and classmates (Baker & Wigfield, 1999; Ryan & Stiller, 1991). So, children who have these motivations read (at least in part) because they believe their reading will bring the benefit of others coming to see them in a positive light. These motivations are also tied to the achievement goal orientation literature; that is, reading to compete with others or gain recognition may be said to reflect a performance goal orientation (Ames, 1992; Dweck & Leggett, 1988).

In addition to describing the characteristics of engaged readers and emphasizing a multidimensional conceptualization of reading motivation, the engagement model (e.g., Guthrie & Wigfield, 2000; Guthrie et al., 2004) specifies a set of practices that teachers can employ to increase reading engagement in the classroom, especially the intrinsic motivation and efficacy dimensions of it. These practices include implementing real-world interactions related to texts, encouraging learning and knowledge goals (versus performance goals), providing interesting texts, supporting autonomy in reading and supporting student collaboration. The practice of collaboration support – which has been implemented, for example, by having students form groups to discuss different novels – particularly coheres with the inclusion of opportunities to discuss reading with others in

the conceptualization of reading support in the current study. Furthermore, parents and friends may (intentionally or unintentionally) employ practices similar to those implemented by classroom teachers that strengthen children's reading engagement.

Broad Theories of Achievement Motivation

Overview. Two theories of achievement motivation that apply to an array of activity domains are presented in this section in order to place this study in a broader theoretical context. First, to address the question of why, in particular, the motivation constructs of efficacy/challenge, knowledge goals/interest, autonomy, competition, and recognition are being studied in relation to reading support, SDT (Deci & Ryan, 1985) is delineated. Second, EVT [Eccles (Parsons) et al., 1983] is presented because of the relevance of this theory and findings emanating from previous studies that employed it to the issues of whether there are gender differences in perceived reading support, and what the consequences of any gender differences might be.

Self-determination theory. Pieces of SDT have been introduced already in the description of the motivation constructs included in this study. Here I provide an overview of the theory and how it may help explain links between reading support and reading motivation.

According to SDT, self-determination is the experience of having control over one's behaviors and activities, or feeling autonomous, rather than feeling controlled or pressured about engaging in them (Deci & Ryan, 1985; Grolnick et al., 2002). Self-determination theorists propose that when individuals are self-determined, they are better adjusted psychologically and have higher self-esteem, and indeed, more than 30 years of research has indicated that this is so. Among the variety of positive outcomes that have

been linked to self-determination are more active engagement in activities, higher achievement, lower anxiety, and greater overall well-being. Moreover, lack of self-determination has been associated with converse outcomes (see Grolnick et al., 2002, Ryan & Deci, 2000a, 2000b).

In SDT, motivation falls along a continuum of self-determination, from amotivation, a state in which self-determination and the intent to act are absent, to intrinsic motivation, where people's activity is fully self-determined and engaged in because it is naturally interesting or enjoyable to them. In between these poles are four types of extrinsic motivation, the motivation to do something because of some reward or benefit separable from engaging in the activity or action itself (Deci & Ryan, 1985; Ryan & Deci, 2000a). The type of extrinsic motivation closest to amotivation is external regulation; in this state, one is driven to act entirely by external controls, either to receive a reward or avoid punishment. The second step away from amotivation is introjection, which reflects slightly more autonomy in that behavior is controlled by self-imposed pressures; in this state, one is driven by the desire for approval from others, so one acts either to avoid feelings of guilt or anxiety or to heighten pride or self-esteem. The next type, identification, reflects greater autonomy; in this state, one is driven by recognition and acceptance of the value of a behavior for attaining a personal goal. Finally, integration is the type of extrinsic motivation that is most self-determined, and closest to true intrinsic motivation. It is different from identification in that a person who has integrated a behavior not only appreciates the value of it, but has actively endeavored to link it with their other values and needs; they have fully internalized it. Integration is

different from intrinsic motivation because an integrated behavior still is engaged in for instrumental reasons, not pure enjoyment or interest.

Of central concern in SDT are the social and contextual conditions that promote development of the more autonomous forms of extrinsic motivation and that support the emergence or maintenance of intrinsic motivation. Self-determination theorists contend that fulfillment of three basic, inborn psychological needs plays an important role in this regard. Autonomy is considered one of these three needs; the other two needs are feelings of competence and relatedness (Ryan & Deci, 2000a, 2000b). The need for autonomy draws closely on the concept of internal perceived locus of causality from the attributional theory of de Charms (1968). It refers to people's need to feel that they themselves, rather than other people or external events, are the originators of their behaviors; people whose need for autonomy is well-satisfied do not feel controlled by such things as rewards, deadlines, or competition pressure created by others (Ryan & Deci, 2000a, 2000b). The need for competence refers to the need to perceive that one is skilled and effective in activities that one values (Deci & Ryan, 2000; Ryan & Deci, 2000a). Lastly, the need for relatedness refers to the need for feelings of connection and belonging with another individual or group. To internalize a value or behavior important to another person or group, a sense of relatedness to that person or group is considered critical (Ryan & Deci, 2000a). Furthermore, while intrinsic motivation may be supported by a distal, general sense of relatedness to significant others, for internalization of a particular value or behavioral recognition it seems key to experience high relatedness in interactions directly relevant to that value or behavior (Grolnick, Deci, & Ryan, 1997).

Research based on SDT suggests that socialization agents, particularly parents, can play an important role in fulfilling children's needs for autonomy, competence, and relatedness (Ryan & Deci, 2000b, Grolnick et al., 2002; Grolnick & Ryan, 1989; Grolnick, Ryan, & Deci, 1991; Grolnick & Slowiaczek, 1994). For instance, socialization agents may support children's need for autonomy by permitting them choices in activities, by encouraging but not demanding certain behaviors, and by interacting with them in shared activities in ways that support their later independent functioning in them. They may support children's competence by providing structure, or predictable rules, guidelines, and routine for a given activity, and by helping them succeed at optimal challenges, that is, activities that are just beyond the children's independent ability (Grolnick et al., 2002). Lastly, they may fulfill children's need for relatedness through involvement, defined broadly as "dedication of resources to the child" (Grolnick et al., 1997, p. 147). More specifically, involvement includes three components: (1) "devoting time and resources to the child with respect to the target agendas"; (2) "taking interest in the child's activities"; and (3) "providing warmth and caring" (Grolnick et al., 1997, p. 147; see also Grolnick & Ryan, 1989).

The conception of reading support in the current study most directly reflects SDT's emphasis on the importance of involvement. The operationalization of reading support in the present study includes ways that parents and friends may be actively involved in children's reading, such as by helping them choose materials to read, discussing reading materials with them, and actually reading with them. Through these interactions, children's need for relatedness may be filled, especially if they take place in an emotionally warm, caring context (Grolnick et al., 2002). For example, if parents

regularly read with their children in a relaxed, affectively positive atmosphere and children enjoy this interaction, it may follow that children will adopt the value and activity of reading as their own, based on the pleasant associations they have with the reading context. And if reading is already an activity for which children have intrinsic motivation, such a context should further enhance that motivation (Ryan & Deci, 2000b). Hence, the present study, albeit to a limited degree, tapped children's enjoyment related to their experiences of reading support.

It should also be noted that involvement as defined in SDT (Grolnick et al., 1997) is quite similar to definitions of instrumental support in the broader social support literature. For example, Malecki and Demaray (2003) defined instrumental support as including "resources such as spending time with someone or providing him with materials or money," (p. 232). Definitions of instrumental support, however, do not include the warmth and caring component that is part of involvement. This connection between involvement as defined in SDT and instrumental support is one reason why studies of children's and adolescents' experiences of instrumental support and other types of social support are included in a later section of this chapter.

As conceptualized in the current study, reading support may also indirectly represent support for autonomy and competence. For example, during the activity of discussing reading materials with others, which is included in the study's definition of reading support, children may be stimulated to think more broadly or deeply about what they have read or the books others are telling them about than they would on their own, an experience children may find interesting and that therefore may encourage them to read further on their own. Similarly it may provide the type of optimal challenge

discussed by Grolnick et al. (2002) that enhances feelings of competence. In addition, having frequent discussions with others about reading also may fulfill the need for competence by providing structure. Through discussions of reading with others on a frequent basis, for example, children might increase their confidence in their reading comprehension skills, affecting their competence for reading in general.

As discussed in the previous section, I assessed children's perceptions of reading support in relation to five dimensions of reading motivation: knowledge goals/interest, efficacy/challenge, autonomy, competition, and recognition. Having strong knowledge goals and interests that one aims to fulfill through reading may reflect either true intrinsic motivation or deep internalization of the value of reading. Although intrinsic motivation may not require support from others, it may benefit from it (Ryan & Deci, 2000b), and support, in the form of involvement, autonomy support, and structure, is key for the process of internalization according to SDT. Therefore, Hypothesis 4 specified that the dimension of knowledge goals/interest would relate positively to children's reported reading support. Likewise, Hypothesis 4 also specified that reading support would relate positively to efficacy/challenge, which is quite similar to SDT's construct of competence, and to autonomy, based on SDT's premise that these are psychological needs that interactions with socialization agents play a key role in satisfying. Lastly, competition and recognition represent extrinsic motivation, specifically of the introjected type, because they reflect desire for the approval of others and for the experience of pride. These motivations, which fall on the less autonomous side of Deci and Ryan's continuum, may be characteristic of children whose psychological needs are not being well-met. Therefore, Hypothesis 5 stated that they would relate negatively to perceived

reading support. On the other hand, recognition might show positive relations with perceived reading support because both constructs reflect awareness of if not concern with others' thoughts and behaviors relevant to one's reading.

It should be noted that SDT does not make predictions about the contributions of different sources of support to motivation; thus, it did not guide Hypothesis 6, which concerned the relative contributions of different sources of perceived reading support to reading motivation and activity. Furthermore, most previous research grounded in SDT on children's need fulfillment has focused on the role of parents, teachers, or other authority figures; that is, little research has focused on need fulfillment by peers. Research on children's perceptions of peer involvement is particularly lacking; at least two studies, however, have investigated general relatedness and representations of relationships to peers. In Ryan, Stiller, and Lynch's (1994) study of young adolescents' representations of relationships with friends, parents, and teachers, friend representations did not contribute uniquely to school motivation outcomes, whereas those of parents and teachers did. However, in Furrer and Skinner's (2003) study of third- through sixth-grade children's sense of relatedness to parents, teachers, and peers (classmates and friends) relatedness to each figure contributed uniquely to several measures of school engagement. This study is discussed further in a later section of this chapter, along with other empirical studies of social support from multiple sources, which did impact Hypothesis 6.

Briefly, it is also important to recognize that relations between support for self-determination and children's levels of self-determination are likely bidirectional and cyclical (Grolnick et al., 2002). That is, for example, a child who receives much

appropriate support may act in a self-determined way that spurs their parents and others to give them additional support. Since data were collected at a single time point in the current study, findings regarding relations between reading support and reading motivation and frequency will not be interpreted as bearing on the question of directionality, although some possible mechanisms of influence will be considered.

Expectancy-value theory. Eccles, Wigfield, and colleagues' EVT [Eccles (Parsons) et al., 1983; Wigfield & Eccles, 1992, 2000] presents children's expectancies for success on tasks, or beliefs about how well they will do on future tasks, and the value they place on them as the most direct predictors of task participation, persistence, and performance. This theory categorizes values into four types: attainment value or importance, intrinsic value or enjoyment, utility value or usefulness, and cost or any sacrifice needed to do a given task. Research based on the theory indicates that values especially predict persistence and activity choices, while expectancies especially predict performance (Wigfield & Eccles, 1992).

Unlike earlier types of expectancy-value theories, Eccles, Wigfield, and colleagues' theory also specifies many personal, social, and cultural elements that may influence children's expectancies and values and thereby their achievement-related choices (Wigfield et al., 2006). The influencing element in the model most relevant to the present study is children's perceptions of socialization agents' beliefs and behaviors concerning them and different tasks or activities, such as whether girls or boys have more natural talent in a given activity. In the model, these perceptions are in turn predicted by the socialization agents' actual beliefs and behaviors, which themselves are predicted by such things as the socialization agents' general tendency to espouse gender role

stereotypes and children's actual aptitudes and previous experiences in various activity domains.

There is considerable empirical evidence that parents have both short- and long-term effects on children's motivation for different activities and actual activity choices in the ways predicted by EVT. Moreover, a number of studies grounded by the theory indicate that parent beliefs and practices specifically contribute to gender differences in children's motivation and activity choices (see Meece, Glienke, & Burg, 2006). Most relevant to this study are the gender differences found in the reading/language arts domain, which, in line with cultural stereotypes, generally favor girls. For example, Jacobs et al. (2002) found that girls valued reading/language arts more than boys during elementary school.

Expectancy-value research examining parental influences, however, has focused much more on the math and science domain than reading/language arts. This work, which has employed a combination of parent- and child-reports of parents' beliefs and behaviors, has provided several examples of how parents view and treat their daughters and sons differentially, most often in ways that favor sons [e.g., Eccles, 1993; Eccles (Parsons) et al., 1982; Jacobs et al., 2005; Simpkins et al., 2005]. For example, Eccles (Parsons) et al. (1982) found that mothers and fathers of fifth- through eleventh-grade girls believed that their child had to work harder in math and that math was less important for their child than did parents of boys, although the girls and boys in the study had equal math achievement. And with regard to actually treating boys and girls differently, Jacobs et al. (2005) found that mothers purchased more math/science-related toys, books, and games for boys than girls from first through sixth grade; interestingly, however, they did

not find consistent gender differences in parent involvement in children's math/science activities.

Although analyses in the reading/language arts domain have been more limited, there is evidence that parents view and treat girls and boys differently in a gender-stereotyped way in that domain as well. Eccles, Jacobs and Harold (1990) reported evidence of gender bias, favoring girls, in parents' perceptions of their children's competence in English. Parents of girls also attributed their children's English performance more to natural talent than to effort, and this perception was linked to parents' general tendencies to espouse gender stereotypes. Similarly, Eccles and Frome (1998) found that mothers slightly overestimated their sixth-grade daughters' English ability and slightly underestimated their boys'. Another study revealed that parents encouraged elementary school-aged girls to read more than boys and had the girls read to them more frequently (Harold et al., 1991, as cited in Eccles, 1993). But Eccles (1993) noted that although parents view girls as more competent in reading/language arts than boys, they do not differ in their beliefs about the importance of the domain for their children. The findings described here contributed to the prediction that girls would show a more positive profile of perceived reading support, motivation, and frequency than boys in the current study (Hypothesis 3a).

Importantly, research guided by EVT has not only shown that differences exist in how parents view and treat girls and boys in various domains, but has also demonstrated how parents' beliefs and behaviors affect children's self- and task-perceptions, activity choices and achievement. This work indicates that parent beliefs about their children's abilities and the importance of subject domains relate to children's ability-related beliefs,

valuing of domains, and future plans more directly than or beyond children's performance in the focal domains [Eccles (Parsons) et al., 1982, 1983; Frome & Eccles, 1998, Jacobs & Eccles, 1992; Jacobs et al., 2005]. Furthermore, these relations appear to be mediated by children's perceptions of their parents [e.g., Eccles (Parsons) et al., 1983]. Another key finding is that parent beliefs and involvement, in the form of encouragement, co-activity, and provision of materials, appear to relate positively to children's beliefs and activity participation more than parent role modeling (without child participation), at least in the math/science domain [Eccles (Parsons) et al., 1982; Simpkins et al., 2005]. It is important to recognize, however, as Eccles (1993) warned, that the relationship between activity encouragement from others and children's valuing of that activity may be curvilinear; that is, extreme encouragement may backfire by undermining a child's motivation.

Some expectancy-value research has also compared mothers' and fathers' beliefs and behaviors, and the extent to which they relate to children's beliefs and behaviors. Taken together, these analyses offer equivocal answers to questions regarding whether mothers and fathers differentially affect their children's motivation. For example, in their investigation of the math domain, Eccles (Parsons) et al. (1982, 1983) found that fathers' beliefs were more sex-differentiated than mothers', while Frome and Eccles (1998), who examined both math and English, reported the opposite, in both domains. In addition, Eccles (Parsons) et al. (1982, 1983) concluded that mothers' beliefs had greater influence on their children's beliefs, while Simpkins et al. (2005) found that parent gender did not matter when exploring relations between high amounts of support for math, science and computer activities and elementary school children's participation in those activities.

Furthermore, Simpkins et al.'s study indicated that parent behaviors were generally additive, with children showing more frequent participation in the activities of interest when both parents, versus one parent of either gender, were high in encouragement, modeling, and involvement with the child for the activities.

The current study thus aligns with previous work framed by expectancy-value theory by including examination of possible gender differences in how parents support their children (as perceived by the children) in a domain (recreational reading) that is somewhat gender-stereotyped, and examining how parents' behaviors relate to children's motivation and participation in the domain. Also, like some of the studies discussed above, the study was designed so that the behaviors of mothers and fathers could be compared. The study, however, is unlike most previous research framed by the theory in that the focus is on the domain of reading, and specifically recreational reading rather than reading as an academic subject. Also, children were asked about the behaviors of their parents as well as those of their friends, a socialization agent not ordinarily investigated in EVT-guided research. Furthermore, some of the motivation constructs examined in the study are not included in the EVT model.

Changes in Reading Attitudes and Engagement: A Practical Rationale for Examining Relations between Reading Support and Older Children's Reading

As noted in Chapter 1, reading motivation appears to increase children's reading amount, and the more children read for school assignments and in their free time, the stronger their reading skills become (Cunningham & Stanovich, 1997; Guthrie et al., 1999; Taylor, Frye, & Maruyama, 1990). Research has also indicated that relations between reading attitudes and reading achievement grow stronger with age, at least into

the junior high years (Kush et al., 2005). Unfortunately, while research clearly points to the importance of reading motivation and frequency for reading achievement, there is also a large body of evidence indicating that older children have less positive attitudes and motivation for both academic and recreational reading and read less frequently in comparison to younger children and to themselves when they were younger. Much of this evidence comes from studies guided by the reading-specific theories discussed above as well as by EVT.

For example, in a nationally representative, cross-sectional U.S. survey of over 18,000 children, McKenna et al. (1995) found that recreational and academic reading attitudes continually declined from grades one through six, with all differences from one grade level to the next significant, except the difference in recreational reading attitudes for second and third graders. The youngest children in the study indicated positive attitudes toward reading, while the oldest showed indifference. Furthermore, boys and poor readers showed less positive attitudes than girls and better readers, respectively, and for recreational reading attitudes, the gaps between the sexes and the ability groups increased with age. Using a longitudinal design, Kush and Watkins (1996) obtained similar findings: overall the children in their study, who were in first through fourth grade at the first survey administration and third through sixth grade at the second administration, declined in reading attitudes over time, with the boys showing lower recreational attitudes at both time points as well as less stability in their attitudes.

A number of studies have similarly shown declines in aspects of reading motivation. For example, Eccles, Wigfield, and colleagues conducted three large longitudinal studies that included measures of children's ability-related beliefs and

valuing of reading/language arts as school subjects [e.g., Eccles (Parsons) et al., 1983; Eccles, Wigfield, et al., 1993; Jacobs et al., 2002; Wigfield, Eccles, MacIver, Reuman, & Midgely, 1991; Wigfield et al., 1997]. Taken together, these studies showed that children's ability-related beliefs declined during the elementary and middle school years and through eleventh grade, with the most apparent declines during the elementary years and with actually a small upswing at the end of high school. They also provided strong evidence that some aspects of children's valuing of reading/language arts (i.e., liking and importance) declined through at least the elementary years and into junior high, although children may come to see this domain as more important during junior high and high school. In addition, these studies revealed gender differences in the rate of decline; for instance, Jacobs et al. (2002) found that although girls and boys started elementary school with similar levels of perceived competence in reading, boys' perceptions declined more quickly than girls'. But, somewhat surprisingly, girls, who valued reading/language arts more than boys, showed faster declines in this aspect of reading motivation than boys did during the elementary years.

There may be multiple reasons for these apparent declines in reading attitudes, motivation and frequency as children grow older (see Wigfield et al., 2006, for detailed discussion). One reason directly relevant to this study stems from the dual developmental phenomena that as children grow up, (a) they ordinarily take increasing control over their lives, particularly in terms of how they spend their free time and the amount of effort they put into their schoolwork, and (b) activities become available to children toward which they have more positive attitudes or motivation for than reading, even if their reading attitudes or motivation do not become negative per se (McKenna et al., 1995). In other

words, as reading is an activity that children have typically engaged in alone or with others since they were quite young, by the time they reach the upper elementary and middle school grades, it may be an option that seems boring in comparison to other choices like sports and video games.

Furthermore, as children proceed from elementary school to middle school and high school, their social relations shift in ways that could contribute to declines in reading engagement. Generally, during adolescence, peers, especially close friends, come to play a more prominent role in children's lives, while parent and teacher involvement, support, and other relationship features, or at least perceptions of these features, often appear to decrease (Buhrmester & Furman, 1987; Furman & Buhrmester, 1992; Hunter & Youniss; 1982; Rubin et al., 2006; Wigfield et al., 2006). For example, in Furman and Buhrmester's (1992) cross-sectional study of perceived support by children and adolescents, fourth-graders rated relations with mothers, fathers, and teachers as more supportive than did seventh-graders. Furthermore, fourth-graders reported more support from parents than from their closest same-sex friends, whereas there was no difference in seventh-graders' ratings of support from parents and friends, and tenth-graders rated friends as more supportive than anyone else. In addition, research suggests that the changes in children's relationships with others from childhood to adolescence affect children's engagement in and motivation for particular activities. While changes in relations with parents and teachers seem primarily to have negative effects on children's achievement motivation, the impact of peers has potential to be either negative or positive (Rubin et al., 2006; Wigfield et al., 2006). With regard to reading, perhaps a once avid reader spends less time reading once she enters middle school not because her friends

actively discourage reading, but because spending time with them cuts into the hours she had previously devoted to reading. Conversely, of course, if she made new friends upon entry into middle school who, for example, enjoyed reading and discussing a popular series of books with each other, she might become more interested in reading so she could share in her new friends' activities. But the generally less positive attitudes and less frequent reading that older children report suggests that the former scenario may be more common. Examining the extent to which support from different socialization agents in reading activities relates to older children's engagement in reading thus may hold implications for helping them maintain and perhaps even develop positive reading attitudes and practices during later stages of childhood.

Based on the empirical studies described in this section, in the present study fourth-graders were predicted to show a more positive profile of perceived reading support, motivation, and frequency than fifth-graders (Hypothesis 3b). Differences were not expected to be extensive, however, given that the children were only one grade level apart.

Children's Support from and Interactions with Socialization Agents in Reading:

Empirical Research

Parent Support and Young Children's Reading Engagement

Much more empirical work has focused on the potential role that parents may play in helping their children develop interest and other positive feelings about reading before they enter school and while they are in the primary grades than when they are in the upper elementary school grades, middle school, or high school. This literature was reviewed thoroughly by Baker et al. (1997). Thus here I discuss the major findings from

their review to provide a backdrop for the studies of older children that are discussed subsequently, and ultimately, to draw upon in interpreting the current study's findings. (It should be noted that Baker et al.'s review included five studies involving children in the third grade or higher; however, the conclusions appeared to be based primarily on the findings from the studies of younger children.)

One of Baker et al.'s (1997) main findings was that frequent engagement in literacy activities with others at home, including such activities as reading storybooks together and making trips to the library, does appear related to children's interest and motivation for independent reading. However, the relations found are typically not very strong, which Baker et al. suggested may be due to methodological limitations of the studies, such as inaccuracy and social desirability effects in parents' responses and composite measures that may mask the importance of individual aspects of the home environment. Baker et al. (1997), however, contended that there is rather strong evidence that the affective quality of interaction between parents and children during storybook reading has repercussions for children's feelings about reading and its uses. Parents seem to play a major role in both modeling for their children how to engage with text and in creating a warm emotional climate while reading that prompts positive responses in their children. Talking about story content, rather than proceeding straight through the text, also seems to make reading a more enjoyable experience for young children.

Baker et al. (1997) also emphasized that a body of evidence has accrued demonstrating that parents who espouse and act upon the belief that reading should be a source of entertainment and pleasure have children with more positive orientations toward reading than children of parents who focus on reading as a basic skill to master.

DeBaryshe (1995), for example, who focused specifically on mothers' beliefs about reading out loud with their young children, found that the beliefs that children need book interactions everyday and that reading with preschool children should focus more on meaning-making than on learning to decode directly predicted children's interest in reading.

Based on their review, Baker et al. (1997) made some recommendations for parents and those interested in coordinating family literacy interventions. First, they stressed the importance of recognizing that the causal direction of relations between home reading experiences and motivation is bidirectional; the child's reading-related behaviors may influence the parents as much as the parents' behaviors influence the child. Second, they asserted that parents may help foster their young children's motivation for reading, and more generally their interest in literacy, by encouraging them to engage in emergent literacy activities, like pretend reading of storybooks and scribbling that represents writing, and otherwise showing that they value and support such efforts. They may do so in part by providing their children with a variety of reading materials and frequently reading with them. Moreover, though, Baker et al. emphasized the importance of parent-child interactions during shared storybook reading occurring in an emotionally warm context. Furthermore, they pointed out that it is important for parents not to force their children to engage in shared storybook reading; if a child, for example, is too restless to listen to an entire book, the parents should try to engage him or her in alternative reading-related activities. Lastly, Baker et al. (1997) recommended that parents who believe it is important to teach their children basic reading skills be

encouraged to do so in a playful, informal manner rather than through school-like reading lessons.

Several studies conducted by Baker and colleagues subsequent to the Baker et al. review (1997) have provided additional evidence that it is beneficial for parents of preschool and primary grade children to adopt an entertainment perspective towards reading. Specifically, they have linked this perspective with children reading more frequently (Sonnenschein et al., 2000) and with them being more motivated to read in terms of enjoying, valuing, and feeling more competent at reading than children whose parents adopted the basic skills perspective (Baker & Scher, 2002). In two studies, furthermore, children of parents with the entertainment perspective actually demonstrated better reading skills (Sonnenschein et al., 2000; Serpell, Sonnenschein, Baker, & Ganapathy, 2002). Specifically, Serpell et al. (2002) found that family income and ethnicity contributed little or no variance when entered after indices of family culture, like early emphasis on reading as entertainment, in regression analyses predicting basic reading skills and reading comprehension in third grade.

In addition, Baker and Scher (2002) found evidence that the basic skills perspective may actually have undesirable consequences for young children's reading motivation. That is, their results showed that engaging in shared reading of basic skills books at home related negatively to the enjoyment and value aspects of motivation in first-graders. Also, in line with ideas that the quality of reading support matters perhaps more than how often it occurs, this study indicated that frequency of library visits and of shared storybook reading did not correlate either positively or negatively with the measures of motivation. This emphasis on the entertainment perspective was also

reiterated in Baker's (2003) more recent review focused on how parents may motivate struggling readers of all ages.

Altogether, these findings concerning the role that parents play in fostering young children's reading engagement raise questions regarding whether parents, and others in the broader social world that children interact with as they grow up, may promote older children's reading engagement in similar ways and to a similar extent. The current study was designed to provide some indication of whether meaningful "reading support" for older children is represented by the same types of parental behaviors as that for younger children, such as encouragement, modeling, talking about reading materials, and joint reading activities. Unlike the work by Baker and colleagues, however, it was beyond the scope of this study to include parent self-reports of their beliefs about reading; rather, children reported on their parents' behaviors. Because of this methodological difference, there may be less concern about social desirability affecting the findings; that is, children may be less concerned about portraying their parents positively than parents would be about portraying themselves.

Older Children's Social Interactions in Reading

In comparison to the number of studies focused on parents' reading support and young children's reading engagement, relatively few studies have examined how parents can promote reading engagement in children who have progressed beyond the primary grades. Of the studies that are relevant at all to social aspects of older children's and adolescents' reading engagement, a number of them considered the role of social interaction in literacy activities in general terms, that is with items or scales jointly concerning "family and friends" as opposed to specific socialization agents. These studies

provide insight into the overall experience of social interaction in reading by children of different ages and genders, its predictive characteristics, and its importance relative to other aspects of the literacy environment.

In several studies, social interaction with family and friends in reading has emerged as an aspect of children's reading motivation, a construct which encompasses the reasons why people do or do not choose to read in general and specific situations. For example, when Palmer, Codling, and Gambrell (1994) surveyed 330 third- and fifth-grade children about their reading experiences, social interactions about books, particularly book recommendations from significant others, appeared as one of four prominent aspects of reading motivation for students at all levels of achievement and attitude toward reading, along with access to interesting text, opportunity to self-select reading material, and prior experience with particular books.

In addition, Wigfield and Guthrie (1997) developed a survey called the Motivation for Reading Questionnaire (MRQ) on the basis of several general theories of motivation. Two of the eleven dimensions of reading motivation it assesses pertain to the social realm: reading to interact with friends and family and reading to comply with externally established goals. Wigfield and Guthrie (1997) administered the MRQ to 105 fourth- and fifth-graders at two time points (fall and spring), while Baker and Wigfield (1999) gave a slightly refined version of the questionnaire to a more ethnically diverse sample of 371 fifth- and sixth-graders at one time point (fall). In both studies, scores on the social interaction scale, which included items inquiring how much children enjoy reading and discussing reading with others, correlated most strongly (specifically at $r = .5$ or higher) with the following other dimensions: reading efficacy, involvement, curiosity,

and recognition. The social scale also correlated weakly to moderately with reading amount, but not with reading achievement. Not surprisingly, given that girls typically report more positive attitudes towards reading than boys (Kush & Watkins, 1996; McKenna et al., 1995) and that stereotypically they are expected to be more social than boys, in both studies girls appeared significantly more socially motivated to read than were boys. Also, fourth-graders appeared more socially motivated than fifth-graders in the fall but not the spring (Wigfield & Guthrie, 1997), and fifth-graders more socially motivated than sixth-graders (Baker & Wigfield, 1999). These findings are in line with the general declines in reading motivation reported with age, but conflict somewhat with the idea that children's general social orientation increases as they approach adolescence. A final interesting commonality in these two studies was that the mean score for the social interaction dimension was the second-lowest of the mean scores for all 11 dimensions. These comparatively low scores do not necessarily mean that students did not enjoy reading-related interactions, but could simply reflect that they had little opportunity to interact in reading or lacked awareness of their social reading experiences.

Guthrie, Schafer, Wang, and Afflerbach (1995) provided further evidence that social interaction about reading, involving any social partners, has motivational potential. Through path analysis of data from the 1986 National Assessment of Educational Progress, which included 9-, 13-, and 17-year olds' responses to items about how often they talk about what they read and write with others, they found that social interaction directly predicted frequency of reading activity across ages. The betas associated with these effects were significant for each age level and for different types of reading (general, fiction, nonfiction, and news), with a high of .34 for 9-year olds' general

reading activity, although overall the magnitude of the relations were similar across ages. The relation between social interaction and reading activity was also mediated in several models by library usage and study strategies. The strength of this study lay in the size of the sample (N=2,795), as well as its geographic and ethnic diversity. A limitation to this study, though, was that the reading frequency variables were the only indicators of reading engagement that the researchers were able to include in the path models. No information, for instance, was available about students' interest in reading or their reading efficacy, motivational variables which may have been able to better explain how social interaction worked in concert with the other variables that were included in the path models, such as teacher instructional practices, to affect reading amount.

Rowe (1991), however, did assess, to some degree, the impact of social interaction about reading on other motivational dimensions in a similarly large-scale, cross-sectional study, involving 5,000 Australian children from 5 through 14 years of age. But he included one item concerning independent leisure reading in his "home reading" scale that otherwise assessed shared reading with family and friends, and it is not clear how much weight that one item carried in his analyses. At least, though, if children responded positively to the item, it meant that family and friends did not prevent independent reading at home. Therefore, Rowe's finding that home reading had positive direct effects on how enjoyable and useful the children found reading, as well as to what degree they perceived themselves as competent readers, provides some support for the predictive value of social interaction about literacy. It is interesting to note, as in Guthrie et al.'s study (1995), that the relations were of similar magnitude for all ages, with the

path coefficients in Rowe's study ranging from a low of .76 for 5-6 year olds to a high of .87 for 7-8 year olds.

Finally, Millard (1997) considered the interplay of social aspects of young adolescents' reading activity, attitudes about reading, and gender identity and stereotypes by administering open-ended questionnaires to 255 students beginning secondary school in England. Millard found clear evidence that girls interacted more with their family and friends in reading than boys; for example, over 50% of girls reported sharing books with family and friends, while less than 30% of boys did — although a majority of boys did report sharing magazines with others. The girls also reported reading more frequently than the boys did and were observed by Millard to be more engaged during free reading time in school, but unfortunately no attempt was made to show that social interaction in reading was correlated with this evidence of girls' more positive orientation toward reading. In her discussion, however, Millard provided a strong argument that girls' greater reading engagement may stem from how others in their life as well as the culture at large convey that reading, particularly of narrative materials, is a desirable and appropriate pursuit for females, but not for males.

Altogether, the studies discussed in this section provide basic evidence that social interaction in literacy activities, regardless of specifically with whom the child or adolescent interacts, is indeed a common experience of at least some engaged readers. These studies also set the stage for examining the literature concerning the extent to which older children receive reading support from different types of socialization agents, that is, their mothers, fathers, and peers, and the extent to which support from different

sources relates to if not actually influences aspects of older children's reading engagement.

Support for Reading from Parents and Other Specific Socialization Agents

Overview. This section focuses on the relations between support from specific socialization agents and older children's motivation for reading. The studies discussed here are grouped according to whether the researchers employed quantitative or qualitative/mixed research methods. This organization was selected because the two types of studies not only differed in terms of the analytical approaches employed, but also on the whole in the breadth of their definitions of reading. Specifically, the quantitative studies generally focused on book, magazine, and newspaper reading, whereas the qualitative/mixed method studies generally did not place constraints on the types of text that were of interest.

First, quantitative studies in two categories are presented: (1) studies focused solely on parent support and (2) studies that assessed parent support in addition to support from other socialization agents. Second, the qualitative or mixed method studies, which are generally more recent than the quantitative studies, are described. Again, both studies which focused exclusively on parents and those that provided insight into how parent support compares and contrasts with support from others are included.

Quantitative studies. In the realm of quantitative studies focused solely on parent support, Hansen (1969) conducted a groundbreaking study in two regards. First, it was the earliest study to explore relations between parents' actions and an aspect of older children's engagement in reading in addition to their reading achievement. In addition, it was apparently the first study to investigate whether process variables, rather than simple

social class and family descriptors, or “status characteristics,” predicted older children’s reading. Thus, with its emphasis on how parents attempt to support their children’s literacy, variables which parents have more immediate control over than family characteristics like income or size, this study had the potential to offer insights that could form the basis of advice or interventions for parents interested in strengthening their children’s reading engagement.

Specifically, Hansen (1969) interviewed the mothers of 48 fourth-grade children about the availability of reading material at home, parents’ amount of reading with the child, parental guidance and encouragement for reading, and parents’ own reading behaviors, and then rated the home literacy environment on a 7-point scale. This rating correlated significantly with children’s scores on a self-report reading attitude scale (but Hansen did not report the actual correlation), whereas none of the basic descriptor variables, including father’s occupation, father’s education, family size, child’s birth order, and child’s IQ did so. The home literacy environment rating, as well as IQ, also correlated with reading achievement test scores, but none of the variables of interest correlated with amount of book reading, as obtained from children’s library records.

Neuman (1986) conducted a similar study of a slightly larger, older, and more ethnically diverse sample of children, that is, 84 children in fifth-grade, 36% of whom were from minority ethnic groups. Specifically, she administered a semi-structured questionnaire to the children’s parents over the phone which tapped general learning support as well as included several items specifically about support for reading, including parent reading habits, provision of place and opportunity for reading, availability of reading materials, reading with the focal child when he or she was young, and

encouragement to read books, magazines, and newspapers. Analyses showed that a composite of these reading support variables had a zero-order correlation of .53 with leisure reading activity (a composite of several highly related subscales), and a partial correlation of .41 after controlling for gender and SES. Analysis of the items in the composite independently revealed that parents' frequency of reading to the focal child when he or she was young correlated most strongly with current leisure reading activity (zero-order $r = .42$; partial $r = .32$). There was not a significant zero-order correlation between the composite variable and gender.

While Hansen's (1969) and Neuman's (1986) findings led them to optimistic discussions of the potential of their findings and similar work to help researchers, educators, and parents foster older children's reading motivation, O'Rourke (1979) conducted a study which led to a less positive and, as he himself stated, unexpected conclusion. In surveying 150 pairs of suburban ninth-graders and their parents with identical questions about their reading experiences, he found that parent-child responses correlated for only three of the ten item scales he investigated. Specifically, parents' and children's book use (which referred to sharing books with peers, buying books, and purposes for reading) and their library use/attitude correlated weakly (r 's = .18 and .27, respectively), while their perceptions of their own reading skills correlated moderately ($r = .37$). Scales for which parent and child responses did not correlate included, notably, enjoyment of reading and interest in reading. The limited information provided about the items comprising the scales for which responses did not correlate, however, precludes development of possible explanations for the lack of more positive findings in this study. Given that O'Rourke (1979) studied students several years older than either Hansen

(1969) or Neuman (1986), and that with entry into adolescence children typically seek increasing separation from their parents, his findings suggest a plausible developmental trajectory.

Greaney and Hegarty (1987; see also Greaney, 1986) similarly advised against overestimating parental influence on reading engagement (in terms of amount of leisure reading activity), although they, like Hansen (1969) and Neuman (1986) studied fifth-graders. Their caution stemmed from the finding that parents' self-reported home press for reading (a composite of 26 items concerning parental reading activity and interest, provision of reading space and materials, reading with the child, and encouragement of reading) correlated rather modestly with the amount of time the 127 fifth-graders in their study reported reading books in their leisure time ($r = .23$) as well as their self-reported attitudes toward reading ($r = .26$) and their tendency to read for enjoyment ($r = .19$). Furthermore, home press did not correlate with reading for utility or reading for escape from everyday life, and did not contribute to book reading amount after controlling for reading achievement, library membership, and gender.

As acknowledged, however, by Greaney and Hegarty (1987), the correlations they obtained may have been stronger had the sample not been so homogeneous in home press and background characteristics. In addition, the high home press reported overall by parents raised concern regarding the degree to which social desirability affected their responses, a concern shared by Neuman (1986). Another question raised by this and other studies relying on parental report is the extent to which the children in these studies perceived the home press for reading. That is, if children did not perceive it very strongly, nor appreciate it, this could explain the lack of stronger correlations. Thus, it may be

important for researchers to ask older children to report on their parents' beliefs and actions related to reading, as well as ask parents directly, in order to provide deeper insight into what makes older children more or less motivated to read.

It is also interesting to note that when Greaney and Hegarty (1987) compared students who read books for at least one hour of their leisure time over four days with those who did not pick up a book at all during the same four days, they found significant differences in home press for reading. Specifically, the avid readers were more likely to have received books from their parents in the past year, to have fathers who read books more often, and to receive encouragement to read books, whereas non-readers received more encouragement to read newspapers. These findings both support the general notion that parent support for reading may play an important role in the reading activity of some older children, and the possibility that using a composite measure for home press in the other analyses may have obscured the importance of some of the individual items or distinct factors comprising it.

Like Greaney and Hegarty (1987), Shapiro and Whitney (1997) compared two groups of students who differed in their amount of leisure reading. The participants included 21 avid readers, defined as those who scored at least half a standard deviation above the mean for amount of reading self-reported during a three-week period, and 18 non-avid readers, who did not report any leisure reading during that period, drawn from five suburban fourth- and fifth-grade classrooms. Importantly, all students were performing at least on grade level in reading, so difficulties in reading could not account for the differences in the amount of their leisure reading. In contrast to the studies

discussed thus far, data about parent support for reading was obtained from the students themselves rather than from their parents.

Shapiro and Whitney (1997) found significant differences between the avid and non-avid readers in four of the seven variables they assessed related to parental support. Specifically, avid readers, versus non-avid readers, reported that their parents more frequently encouraged them to read, gave them books as presents, took them to the library, and stopped reading with them at an older age (an average of 8 years versus 6.6 years). The authors reported several interactions between gender and group (avid or non-avid reader) for these variables, which generally favored the avid-reading girls; but given the relatively small sample size, these interactions may not be very robust. The two groups did not differ significantly in their reports of how often their parents read or used the library or their age when their parents began reading to them. Interestingly, the authors also reported differences favoring the avid readers in enjoyment of reading, intrinsic motivation for reading, and reading-related anxiety; however, they did not attempt to link these differences to parent support for reading.

Only two quantitative studies have been identified that inquired about both parent support for reading and support for reading from other key social figures, and in some respect compared their contributions to older children's reading engagement. First, Wells (1978) surveyed 250 fifth-graders about experiences that both augmented and diminished their motivation for reading, or "those which made them want to read more than they had ever read before" and "those which made them want to give up and not read at all," (p. 22). The study identified six factors, including five related to parent behaviors and only one related to teacher behaviors, thus suggesting that parents may contribute in a greater

variety of ways (although perhaps not in more powerful ways) to older children's reading motivation than teachers.

Interestingly, three of the parent factors that Wells (1978) identified represented negative behaviors, suggesting that parents need especially to be careful to refrain from doing or saying things which may discourage their children from reading. These factors related to parents placing over-emphasis on reading, using reading as punishment or punishing their children because they did not do well in reading, and disregarding their children's particular reading interests or need for help in reading. The other two parent factors were positive, as they related to providing interesting and abundant reading materials, helping children become curious about new topics, and complementing them on their reading. The one teacher factor encompassed a variety of negative behaviors related primarily to providing boring reading materials, assignments, and lessons. Altogether, the six factors accounted for 38% percent of the variability in the students' reading scores on the Iowa Test of Basic Skills; unfortunately, Wells (1978) did not report the amount of variance accounted for by each factor, nor did he attempt to relate the factors to any outcome variables representing reading engagement.

Lau and Cheung (1988) conducted the second quantitative study which inquired in some way about support for reading from parents as well as other socialization agents. Specifically, they asked 2,114 Chinese secondary school students to report (yes or no) whether they themselves as well as their mothers, fathers, sisters, brothers, friends, and classmates read fiction, magazines, comics, and newspapers outside of school. Through chi-square analyses, they found strong associations between the focal students' reading behaviors and the perceived reading behaviors of each of the other figures, contending

that the focal students' reading activity related most closely to that of their peers (classmates and friends), then their siblings, and then their parents. Much caution is warranted in interpreting this study, however, as the authors failed to include information about the rating scales they employed and discussed their findings in terms of influences rather than simply relations, assuming that the causal direction of effect would always be from the significant other to the student based on Bandura's (1977) ideas regarding social modeling.

On the whole, this set of quantitative studies suggests that there are some relations between overall parent support, and perhaps especially some individual aspects of it, with older children's reading engagement, with the bulk of the evidence coming from studies of children in fifth grade. However, they do not provide insight directly into one of the main concerns of the current study, that is, the relative amounts of reading support older children experience from their mothers, fathers, and closest friends, and the extent to which that support relates to aspects of children's reading motivation and frequency. It is also important to note that few of these studies addressed potential gender or age differences in reading support; any time a study did consider these variables, it was noted. These variables are thus of interest in the current study in part because they were so rarely considered in the studies described here.

Qualitative and mixed method studies. The following studies elaborate the portrait developed through the quantitative studies already presented, as they provide concrete examples of how support from parents and other socialization agents relates to older children's engagement in reading. Since many of these studies employed open-ended interviews that directly asked students to describe influences on their reading attitudes,

general reading habits, and decisions to read specific materials, these studies permit discussion in terms of at least perceived causation.

One study which focused solely on parental influences on children's reading was conducted by Chandler (1999). Specifically, she investigated the role that parents played in high school students' penchants for Stephen King novels. She initially hypothesized that parents would oppose their children's reading of King novels, due to their graphically violent and sexually explicit content. She was surprised, therefore, to find that parents had introduced 8 of the 12 student participants, who lived in Maine (the home state of King) to the books, and only one father objected to his daughter reading them. Plus, all students had received King books as presents from their parents or other relatives.

Furthermore, Chandler (1999) discovered that parents' influence was not limited to sharing King novels; for instance, they shared many other books with their children, especially novels by popular writers Dean Koontz and Michael Crichton. Eight students also reported discussing King novels and other books with their parents, their conversations ranging from brief mentions of passages that they enjoyed to reading parts aloud and analyzing the author's craft. Lastly, one mother reported frequently giving her son — a student not on track to graduate from high school in four years yet who considered reading an important part of his life — gift certificates to a bookstore in honor of accomplishments as well as “just because.” This boy himself at one point simply stated, “My whole family's into reading. It's pretty cool,” (p. 234). This anecdote, along with many others, contributed to Chandler's concluding point that informal interactions with parents around literacy, like she observed, may be crucial in keeping students

involved in reading as they grow older, particularly as schools and teachers sometimes neglect or even undermine students' interest in popular fiction and convey to them that there is a right or wrong way to interpret assigned, and typically classic fiction texts. This conclusion is also in accord with Baker and colleagues' (Baker et al., 1997; Baker, 2003) contention that parents who espouse the entertainment-oriented rather than the skill-oriented perspective on reading will have children who are more avid readers.

Like Chandler (1999), Love and Hamston (Hamston & Love, 2003; Love & Hamston, 2001, 2003, 2004), primarily focused on how parents, rather than other socialization agents, attempt to support their adolescents' engagement in reading. Their sample consisted of 166 boys from middle-class, mostly professional families attending a Catholic school in Melbourne, Australia. The boys ranged in age from 11 to 17 years and all were competent readers. However, 91 of the boys were considered committed recreational readers and 75 of them were considered reluctant recreational readers based on the triangulation of data from their parents and teachers. All the boys and their mothers as well as 75% of their fathers completed questionnaires about their own reading practices, their perceptions of the boys as readers, and the ways in which the parents attempted to foster the boys' reading engagement. In addition, Love and Hamston interviewed seven of the reluctant readers and their parents to provide more insight into their lives since the reluctant readers generally provided much briefer comments on the questionnaires than did the committed readers.

In their first research report, Love and Hamston (2001) focused on the committed readers' responses to a question that asked each boy to rate himself as reader on a 5-point scale from poor to excellent and then to explain the reasoning behind his self-rating.

Interestingly, all boys cited their families, teachers, and/or other people as having significant influence on their development as readers. The authors contended that the older boys in this group particularly found support for reading from their fathers, as they frequently described swapping and discussing reading materials with them, particularly non-fiction materials on traditionally masculine topics like cars and military history; in contrast, the younger boys more often reported that their mothers had the greatest influence on their reading. The boys also reported reading books their parents had read as children, either because their parents recommended these books or because the boys themselves sought to do so, “thereby forming a cultural and even spiritual link with their parents” (Love & Hamston, 2001, p. 43). Finally, the boys also spontaneously noted that people other than their parents were involved in their reading activities, namely their siblings and grandparents. In addition, they described reading certain materials, particularly magazines and web sites, in order to help them connect with their friends.

In their other reports, Love and Hamston (Hamston & Love, 2003; Love & Hamston, 2003, 2004) focused more so on the responses of the parents, grounding their explanations in Rogoff’s (1995) ideas regarding guided participation as a means by which children adopt the practices and values of their family and larger community. They found that the parents of reluctant and committed readers did not differ substantially in the ways they supported reading in their homes (Love & Hamston, 2004). For example, the parents of both groups of readers showed highly similar leisure reading patterns, involving regular reading of multiple text types. In addition, mothers in both groups typically reported using the internet and CD-ROMs both for their own purposes and to assist their children, whereas fathers mostly reported using them for their own purposes. Finally,

across groups, mothers and fathers alike reported that the mothers did more than the fathers to establish reading practices at home, in both their sons' adolescence and younger years. Fathers in both groups, though, reported being more involved in their sons' nonfiction reading than their fiction reading.

Only a few differences were described between the parents of the committed and reluctant readers (Love & Hamston, 2004). One difference was that a somewhat higher percentage of the fathers of committed readers than those of reluctant readers (29% versus 16%) mentioned the value they placed on fiction reading, as did a slightly higher percentage of the mothers of committed readers than those of reluctant readers (46% versus 38%). The parents of committed readers also reported doing more to help their sons develop or maintain enjoyment of fiction reading. The parents of committed readers also reported somewhat more often that extended family members influenced their sons' reading habits and choice of materials.

Ultimately, Love and Hamston (2004) concluded that the dichotomy of reluctant and committed readers was too simplistic. This conclusion was based on their findings that the boys identified as reluctant readers were deemed so primarily because they did not appropriate the practice of fiction reading and of privileging print over electronic text, in line with the values of their parents and the broader adult community, as the committed readers did. Many of the reluctant readers actually did read various types of materials other than fiction and especially enjoyed using electronic media as a source of information, entertainment, and communication. Furthermore, they took pleasure in talking about this reading and what they gleaned from it with various other people. Thus, Love and Hamston (2003) suggested that researchers and educators, as well as parents

and children themselves, would benefit from adopting a broader view of reading and its purposes. They also recommended further examination of how fathers and other adult males may foster adolescent boys' reading engagement, especially in light of concerns that reading, particularly reading fiction, is a feminized practice (Love & Hamston, 2004).

While the studies discussed thus far in this section focused primarily on the role that parents have played in their older children's and adolescents' reading motivation, the following studies inquired more broadly about the influences of socialization agents.

First, Duchein and Mealey (1993) asked 90 college freshman in a remedial reading and study strategies class to reflect on their history and development as readers. Although over two-thirds of them expressed disinterest in reading during late childhood and adolescence, their written reflections revealed that more than two-thirds also described their parents or other significant people in their home lives reading to them during the preschool years, with most of these students describing these experiences in positive affective terms. Almost no students, however, reported reading with their parents once they entered elementary school. Similarly, more than half the students fondly remembered their primary grade teachers reading to them, but less than one-third of participants reported that their teachers read aloud to the class in middle school or high school. When teachers did read aloud to them in these higher grades, though, many of the participants described how this practice gave them at least a temporary sense of the enjoyment value of reading. Furthermore, many of these students and others whose experiences of being read to ended in the primary grades expressed the belief that they

would be better and more frequent readers if their teachers had continued reading aloud to them on a regular basis throughout their school years.

Lastly, the responses of the students in Duchein and Mealey's study (1993) revealed that they indeed viewed their peers as an influence on their decline in reading motivation as adolescents. However, their responses suggested that peers affected their reading activity by drawing them into alternative, more social activities rather than by actively devaluing reading, for example, by making fun of students who enjoyed reading in their free time. Thus this study revealed how changes in interactions with parents, peers, and others may work in concert with each other to affect developmental changes in reading engagement, as well as that early support for reading without continued support from important people in one's life may not be sufficient to sustain children's reading activity as they grew older.

From the perspective that large-scale studies have led to an oversimplified and over-generalized characterization of middle school children as being basically competent but unmotivated readers, Ivey (1999a) conducted case studies of three sixth grade-students varying in reading skill, but all of whom demonstrated engagement in reading at least some materials and in at least some situations. Two of these students clearly recognized the influence of their parents on their reading engagement. Casey, a high-achieving and generally very highly motivated reader, replied to the open-ended question about why she became a good reader by citing her mother and her aunt, who both gave her many books, whereas Ryan, an essentially fluent reader who displayed more varying motivation for reading, described how a book that his dad had chosen for his brother,

Call It Courage by William Sperry, became his favorite, which he read multiple times and suggested as an addition to the school library.

Ivey's (1999a) findings seem to align with the tenet of SDT that a sense of relatedness, fostered by others' involvement in children's activities, facilitates motivation (Grolnick et al., 2002). Not only does her work suggest that the involvement of parents around reading promotes children's reading engagement, but she also exemplified how the involvement of other socialization agents may do so as well. For example, Casey described how a teacher's enthusiasm (or lack thereof) for a particular book tends to rub off on her. Ivey (1999a, 1999b) also reported how children often picked the same books and types of books to read independently or out loud that their teachers and classmates had read to the class. Ivey's work thus suggests that others may support children's reading through the same mechanisms as parents, an issue that the proposed study addresses by asking children to rate a good friend as well as their parents.

While Ivey (1999a) contended that middle school students have been overly generalized as unmotivated readers, Smith and Wilhelm (2002) took the same position regarding adolescent boys. It is important to note that they viewed reading in perhaps the broadest terms of any researchers whose work is included in this review; that is, the reading activities they considered ranged from reading novels and information books to reading song lyrics and "reading" movies by critiquing the director's style. Thus, Smith and Wilhelm's (2002) conceptualization of reading was in part what enabled them to challenge the "standard" view of adolescents as overall unengaged in reading and uninvolved with others through any reading that they actually do.

One of the key themes that emerged in Smith and Wilhelm's (2002) study was that for the boys in their sample, reading was very much a social activity; that is, the boys were influenced to read by others, and they read in order to experience involvement with others. Smith and Wilhelm (2002) reached these conclusions on the basis of data collected through a variety of methods from 49 boys in seventh through twelfth grades who varied widely in ethnicity and achievement level, as well as attended several different types of schools (urban, suburban, rural; public and private). Each boy ordered their activities in order of preference and elaborated upon their ratings in interviews, responded to scenarios depicting boys engaged in or rejecting different kinds of literate activity, kept literacy logs, engaged in think-alouds while reading stories varying in narrator gender and action content, and was observed on various occasions by the researchers.

Smith and Wilhelm's (2002) research yielded several examples of how the boys' parents and other family members affected their motivation to read in positive ways. For example, Wolf, an average-achieving European American twelfth-grader attending a suburban public school, reported frequently sharing history books with his father, and Prinz, a high-achieving Asian-American seventh grader attending a private school said he read the front of the Wall Street Journal everyday to give him and his father something to talk about in the car in the mornings. However, the boys' desire to interact with their peers appeared to support their reading engagement and, more generally, their involvement in literacy activities to a stronger degree. One student reported that he became hooked on Orson Scott Card's science fiction through a friend, another reported reading hockey scores in the newspaper and online in order to be able to discuss the sport

with his friends (although he was not even very interested in the sport himself) and many boys cited such activities as reading plays aloud, literature circles, and small group discussions as their favorite in-school reading activities because they involved interaction with their classmates. In addition, the boys generally appreciated reading recommendations from family and friends, whereas they resisted reading assigned or recommended by their teachers, often because they felt that the teachers cared more about the texts than about the boys or their individual interests.

Two additional, recent studies similarly were grounded by the perspective that to identify what motivates children and adolescents to read, or what discourages them from reading, the most effective method may simply be to interview children who vary in reading motivation about their reading experiences, activities, and feelings. Strommen and Mates (2004), for example, interviewed four sixth-graders and five ninth-graders who regularly read for pleasure and equal numbers of students who never or rarely read for pleasure in an effort to identify factors associated with developing a love of reading. They asked the students general questions about why they liked or disliked reading and about the reading behaviors of their family and friends, and they also questioned the readers directly about if their parents had done anything to contribute to their enjoyment of reading. In contrast to “not-readers,” the readers reported that their parents currently and regularly engaged in book discussions with them, gave them specific book recommendations, helped them choose books and build their own libraries, frequently read themselves, and clearly prioritized reading for the family. Interestingly, not-readers did report that their parents, like those of the readers, had read with them when they were younger and still sometimes encouraged them to read, but, in contrast, did not offer them

specific reading suggestions. Also, the not-readers reported that their parents, and they themselves, generally viewed reading in a utilitarian manner, whereas the readers and their parents more so emphasized the pleasure derived from reading as a reason for engaging in it, which aligns with Baker and colleagues' findings regarding young children (e.g., Baker et al., 1997).

Strommen and Mates's (2004) study also provided some insight into the comparative role of parents and others in older children's motivation for reading. While the readers reported that they enjoyed discussing their reading with their friends, for the students in this study at least, the practice of book discussion had always first been established in the family. In addition, they were not concerned about what their peers thought about their enjoyment of reading, and interestingly, the not-readers generally expressed admiration for their friends who were avid readers. As for teacher support, the readers noted some ways in which their early teachers had influenced their involvement in reading and some expressed appreciation for their current teachers who showed passion for reading, saying they helped other students become interested in reading, but did not cite them as major influences on their own love of reading.

In contrast, rather than selecting only students who were especially motivated or not motivated to read, Edmunds and Bauserman (2006) interviewed 16 fourth-graders, who varied widely in their teacher-rated reading ability and motivation levels. These researchers utilized the Conversational Interview Portion of the Motivation to Read Profile (Gambrell, Palmer, Codling, & Mazzoni, 1996) and other supplemental questions, analyzing the children's responses with the constant comparative method (Glaser & Strauss, 1967). While the children most often said they discovered books to read from the

school library (and not, notably, as the authors pointed out, from the school librarian), their responses revealed that people close to them also played an important role in their choice of books, with their friends being the most frequently cited people. They also frequently mentioned family members, especially their mothers, and their teachers; interestingly, family members seemed to be a greater source of referrals to expository text than narrative text, whereas the reverse was apparent for teachers. When the students were questioned directly about who gets them interested in and excited about reading, they most frequently cited their mothers and sometimes cited their teachers or other family members; apparently, they did not mention their peers. It should also be noted that a few children said that no one did, but rather that they read simply because they enjoyed doing so. The things children said others did to get them excited fell into three categories: buying or giving them books, reading to them, and telling them about things they have read. Thus, this study provided insight into what may engage students in reading, even those who are not in general among the most motivated of their peers; however, this approach sacrificed identification of factors that may distinguish those students who are especially motivated to read, and therefore which might be among the most important factors to consider when designing interventions intended to increase reading motivation.

In sum, this section describing qualitative studies provided numerous examples of how parents and other socialization agents have remained important figures in the reading lives of many older children who enjoy reading. In addition, these studies, which employed primarily interview techniques among an assortment of data collection methods, suggest that even those who are not avid readers may appreciate social interaction in reading activities both inside and outside of school. Also, these studies

suggest that broader definitions of reading may help children and adults connect more frequently with each other through reading as well as help make their connections more visible to researchers. Hence, the Reading Support Survey designed for the present study and reading frequency measures include separate items about multiple types of reading materials (books, magazines, newspapers, and web sites). Finally, this set of studies also highlighted the role that gender may play in older children's reading, and their experiences of reading support, which influenced the attention to both parent and child gender in the current study. The current study, however, also aimed to build on the set of studies described here. That is, while these studies provided strong evidence that social interaction in reading is important to at least some highly motivated readers, this study investigated the experience of reading support by a relatively large sample of children, and the extent to which that support related to specific reading motivation dimensions and several aspects of reading frequency.

Relations of Reading Achievement with Reading Support and Motivation

While the current investigation centers on the relations of children's perceived support for their recreational reading with their reading motivation and activity, a few studies reviewed in this chapter also addressed the issue of whether experiences of support and interaction in recreational reading are related to reading achievement. For example, both Hansen (1969) and Greaney and Hegarty (1987) reported significant positive relations between home press for reading and standardized measures of reading achievement. The latter found a moderate zero-order correlation ($r = .33$), while the former did not report the magnitude of the relationship. On the other hand, Baker and Wigfield (1999) found that children's scores on the social dimension of motivation

correlated with neither standardized nor performance assessment measures of reading comprehension and vocabulary. Complementing this finding, other research, including Palmer et al.'s (1994) survey study of children's reading motivations, Chandler's (1996) investigation of influences on adolescent readers of Stephen King novels, and Smith and Wilhelm's (2002) mixed method study of boys' reading lives, has indicated that social interaction related to reading is characteristic of children at varied levels of reading achievement.

As indicated earlier in this chapter, there is a much larger body of research concerning relations between children's reading motivation and activity and their reading achievement; furthermore, much of this research indicates positive relations between them. For example, Gottfried (1990) reported weak to moderate positive relations of intrinsic reading motivation with teacher ratings and standardized test performance in reading for seven- to nine-year-olds. Also, Baker and Wigfield (1999) found significant correlations between a number of the 11 reading motivations they assessed and both their standardized and performance assessment measures of reading; importantly, though, the number of significant correlations differed by ethnicity, with there being more extensive relations for European-American students than African-American students. Researchers have also demonstrated moderate to strong relations between reading activity and achievement using a variety of measures. For instance, Cunningham and Stanovich (1997) measured reading activity with author and magazine name recognition tests and employed standardized reading achievement tests, while Guthrie et al. (1999) employed self-report measures of reading activity and performance assessment tasks.

Given the rather strong evidence that reading achievement correlates significantly with reading motivation and activity, reading achievement was deemed important to control for in the prediction of reading motivation and activity in the present study. Based, however, on the mixed evidence regarding whether reading achievement relates (at least in a linear fashion) to reading support, reading achievement was included in a more exploratory fashion in other analyses.

Social Support from Multiple Socialization Agents in Other Domains

Support from Multiple Socialization Agents and Motivation

While the review of studies in the reading domain suggested that reading support may play an important role in some older children's reading motivation and frequency, it also revealed several gaps in current understanding of this topic. For example, the review indicated that researchers have rarely systematically examined children's perceptions of reading support from multiple socialization agents within single studies. Recently, however, a few studies have been conducted outside the reading domain that simultaneously explored children's perception of support from multiple socialization agents and examined its links with children's motivation. This work is reviewed here to provide an overview of the kinds of insights that may be gleaned from studies, like the current one, that employ such a design.

The criteria for inclusion in the following discussion were: (a) the participants were elementary or middle school students; (b) both perceptions of relationships with parents and peers were measured, since these figures are the focus of the current study; (c) the relations of these perceptions with aspects of motivation were examined; (d) the studies were conducted within the past ten years. The forms of perceived support

examined in these studies varied considerably, from instrumental (personal involvement and assistance) to approval, encouragement, and general social/emotional support. Five studies were identified, one in the math/science domain and four focused on school in general.

In the math/science domain, Bouchey and Harter (2005) examined middle school students' perceived support from their mothers, fathers, classmates and teachers, as well as the students' perceptions of these socialization agents' valuing of math/science and beliefs about the students' competence in this area. As in the current study, support was measured with items about the children's interactions with others and encouragement received in the domain, but, in addition, included items about the approval students received for their math/science schoolwork; their measure was adapted from Harter and Robinson's (1988) Social Support Scale for Older Children and Adolescents. This study was unique among those described here in that mother and father support were analyzed separately. Comparisons showed that students perceived significantly more support from their mothers than from their fathers, and from their mothers, fathers, and teachers than from their classmates. Regarding relations of perceived support with motivation-related outcomes, generally support from each of the three adult figures correlated moderately with the three variables that were assessed, competence in, importance of, and scholastic behavior in math/science. In contrast, classmate support correlated relatively weakly with importance and scholastic behavior and did not correlate with competence. The finding that mother and father support showed correlations of similar magnitude with the motivation variables coheres with the finding of Simpkins et al. (2005), discussed in the section on EVT, that parent gender did not impact relations between high support for

math, science and computer activities and frequency of elementary school children's participation in them.

Among the studies that focused on school in general, Wentzel (1998) examined sixth-graders' perceived support from parents, classmates, and teachers in relation to six motivation variables. Parent support was assessed with a measure of family cohesion (Moos & Moos, 1981), while the teacher and classmate support measures, which were subscales of the Classroom Life Measure (Johnson, Johnson, Bruckman, & Richards, 1985) tapped general social and academic support. One key finding of this study was that support from parents, peers, and teachers generally seemed to operate distinctly, that is, with only one support variable significantly predicting each motivation variable. For example, parent support was the only significant positive contributor to mastery goal orientations, and the only significant negative contributor to performance goal orientations. There was only one exception to this pattern: parent and teacher support both significantly predicted school interest. Wentzel (1998) concluded that support from different people appeared additive in its effects more than compensatory.

Two other studies likewise led researchers to conclude that the effects of perceptions of different socialization agents are generally additive. The first was a study conducted by Marchant et al. (2001) of fifth- and sixth-graders' perceptions of several aspects of their relationships with their parents (four variables), teachers (two variables) and peers (one variable), and of the school atmosphere in general (one variable). For example, with respect to parents, they studied values, involvement, demandingness, and responsiveness. While the results were similar to Wentzel's (1998) in that the effects of parent, peer, and teacher perceptions on motivation appeared additive, these perceptions

each contributed significantly to both of the motivation outcomes that were assessed (importance of effort, ability and grades in school and academic self-competence); that is, the relations between perceptions of particular socialization agents and aspects of motivation were less distinct.

Second, Furrer and Skinner (2003) found evidence for additivity when they studied third through sixth graders' sense of relatedness to parents, peers, and teachers. In this study, mother- and father-related responses were averaged, as were classmate- and friend-related responses, to form parent and peer scales, respectively. As in Marchant et al.'s study (2001), perceptions of parents, peers, and teachers each significantly contributed to all outcome variables in the study, which were self- and teacher-reports of students' emotional and behavioral engagement in school activities. The one exception was that peer relatedness did not contribute to teacher reports of emotional engagement. In addition, evidence for additivity came from person-centered analyses showing that the number of figures to whom a child indicated high or low relatedness mattered; that is, for the most part, the more figures to whom one showed high relatedness, the better one scored on the engagement outcomes. Furrer and Skinner (2003) also gave some attention to children's gender. For example, they found that that boys and girls felt equally related to parents and peers, but girls felt more related to teachers. Interestingly, relatedness to both peers and teachers appeared to matter somewhat more for boys than girls, in terms of its relationship with engagement.

Lastly, Murdock and Miller (2003), like Furrer and Skinner (2003), employed both variable- and person-centered analyses in their study, which examined eighth-graders' perceptions of parent and friend support, measured with items tapping behavior,

attitudes, and expectations, and teacher support, measured with items tapping respect, commitment, and expectations. This study underscored the worth of employing these two types of analyses, as they provided somewhat contrasting results regarding the question of the additivity of support. That is, in line with the last two studies discussed, the variable-centered analyses supported the idea that the effects of parent, friend, and teacher support on children's motivation are additive. However, their person-centered analysis (cluster analysis), which grouped participants according to whether they were low, average, or high on each of the support variables, indicated that such additivity was not taking place in their sample. For example, they found that high peer support did not add to students' motivation when they also had high parent and teacher support. Furthermore, there was little opportunity for compensation to take place, as no clusters emerged that had negative scores on one or two of the support variables and positive score(s) on the other(s).

These five studies offer somewhat conflicting views of the relative amounts and importance of support that older children perceive from different socialization agents. For instance, while a couple studies suggested that peer support may not play as important a role in motivation as support from adults (Bouchey & Harter, 2005; Murdock & Miller, 2003), the other studies suggested that this is not the case (Furrer & Skinner, 2003; Marchant et al., 2001; Wentzel, 1998). The studies also addressed the question of the additivity of the effects of support in a few different ways, and came to somewhat different conclusions about it. And only a couple studies examined whether children's personal characteristics, like gender and ethnicity, might be a factor in the support they perceive or its relations with motivation. Thus, rather than generalizations about the

relations between perceived support and motivation, this section was intended simply to offer evidence that studies which examine older children's perceived support from multiple socialization agents and how it relates to their motivation are rather rare, but worthwhile. Furthermore, although these studies do not point toward general conclusions about children's experience of support from multiple socialization agents, they were an influence, but not the sole one, on the study hypotheses concerning the relative amounts of support children perceive from their mothers, fathers, and friends (Hypothesis 2), the unique contributions of different sources of perceived support to children's reading motivation and frequency (Hypothesis 6), and the ways in which children with different profiles of perceived support may differ in their reading motivation and frequency (Hypothesis 7). Broader research on social support that has systematically focused on its multiple sources and its multiple types also influenced Hypothesis 2, as well as Hypothesis 1, which concerned the dimensionality of perceived reading support.

Support of Multiple Types from Multiple Socialization Agents

While the major focus of the present study is children's perceptions of reading support from multiple socialization agents, in the broad study of social support researchers have also distinguished between various types of support. A thorough review of the psychological literature on children's experience of social support is beyond the scope of this dissertation. Consideration, however, of a few studies that simultaneously investigated children's perceptions of multiple sources and multiple types of social support, including instrumental support as it is the primary focus of the present study, was helpful in forming Hypotheses 1 and 2 of the current study.

For example, Robinson (1995) studied middle school and high school students' perceptions of social support from their mothers, fathers, best friends, classmates, teachers, and romantic interests. She used an adapted form of Harter's (1985) Social Support Scale for Children to tap respondents' general experiences of emotional support, approval, and instrumental aid from each source. Factor analyses indicated that source of support was a more powerful organizing element than type of support, but a model that crossed type and source of support fit the data best. Robinson also thoroughly analyzed students' responses for gender differences, with the key finding being that girls reported greater support of all types from their best friends than did boys. Boys reported greater support than girls in one regard, emotional support from fathers. In addition, comparisons within gender of support from different sources indicated that girls perceived more support from their mothers and best friends than from their fathers in several regards. Also, boys perceived higher levels of support of all types from their mothers than from their best friends, while girls only perceived higher levels of instrumental aid from their mothers than from their best friends.

In a series of studies, Malecki, Demaray, and Elliott (e.g., Malecki & Demaray, 2002, 2003; Malecki & Elliott, 1999) focused on four sources of support – instrumental, emotional, informational, and appraisal – from parents, teachers, close friends, and classmates. Instrumental support represented personal, task-oriented assistance and provision of resources; emotional, provision of affection and general positive social interaction; informational, provision of information and advice; and appraisal, provision of evaluative feedback. They studied these sources and types of support in third- through twelfth-graders using different versions of a measure they developed, now called the

Child and Adolescent Social Support Scale (CASSS; Malecki, Demaray, & Elliott, 2000; Malecki, Demaray, Elliott, & Nolten, 1999). Their work included factor analyses which repeatedly demonstrated that the CASSS has a clear structure with factors corresponding cleanly to the four different sources of support (Malecki & Demaray, 2002, 2003; Malecki & Elliott, 1999). Furthermore, this four-factor structure fit the data better than models that collapse the adult sources or peer sources of support (Malecki & Demaray, 2002). Also relevant to Hypotheses 2 and 3 of the current study, Malecki and Demaray (2002, 2003) found that boys perceived similar levels of support of all types from parents, whereas girls, in fifth grade and higher, perceived more support of all types from friends.

Cauce, Reid, Landesman and colleagues (e.g., Cauce, Reid, Landesman, & Gonzalez, 1990, Reid & Landesman, 1986; Reid, Landesman, Treder, & Jaccard, 1989) also conducted several studies comparing children's perceived support from different sources and of different types. In their research they used an interview instrument called "My Family and Friends" along with manipulative props (Reid & Landesman, 1986), which enabled them to learn about the support perceptions of children as young as those entering first grade (Cauce et al., 1990). Specifically, they investigated who children perceive as sources of instrumental, emotional, informational and companionship support, the rank order in which children turn to various support sources, and children's perceptions of the quality of each support source (in terms of how they feel after receiving support from each source). In their studies children, even of preschool age, perceived differences in support from different sources, including mothers, fathers, close friends, siblings, and teachers. Furthermore, their analyses provided evidence that children recognize that different sources of support sometimes vary in the types of

support they provide. For instance, in one study a sample of children ranging in age from 5-12 years indicated that their parents offered equally high quality instrumental, emotional, informational, and companionship support (though support of each type from mothers was generally rated somewhat higher than the corresponding type of support from fathers), while for friends they indicated high quality companionship, moderate quality emotional support, and relatively low quality instrumental and informational support (Cauce et al., 1990).

Lastly, Dubow and Ullman (1989) conducted a study involving an age group very similar to that of the present study that also offers information about children's relative experiences of support of different types from mothers, fathers, and friends. Specifically, they asked third through fifth children about who gives them emotional support, informational support, and tangible, or instrumental, support, and organized the supporters that children listed into nine categories. Their findings highlighted the prominence of mother support among all sources of support, as 80-81% of children cited their mothers as one of their top three sources of each of the three types of support. For each type of support, fathers and friends were cited by 53%-66% of children, in other words, not as often as mothers, but more frequently than siblings, teachers, and others.

Like the studies described in this section and the previous one, the current study was designed to assess children's perceived support from multiple socialization agents. It focused, however, on a domain, recreational reading, in which, to my knowledge, such a design has not been employed previously. Thus, the current study offers initial insight into whether findings in other domains regarding the relative amount of support from parents and peers, the extent to which support from different figures relates to motivation,

the additivity of support from multiple sources, the interplay of gender and perceived support from particular sources, and the prominence of source versus type of support as organizing elements of children's perceptions, generalize to the recreational reading domain. As the current study focused on the instrumental type of support, the issue of source versus type of support as organizing children's perceptions reflects the possibility of a unidimensional structure of recreational reading support, or of a multidimensional structure with dimensions representing a feature other than support source. However, in line with the results of the studies described herein, Hypothesis 1 predicted that dimensions of support would emerge matching the three sources of support under study – mothers, fathers, and friends.

Chapter 3: Method

Through this study, I aimed to increase understanding of the role that mothers, fathers, and friends play in older children's reading. The study evaluated seven hypotheses concerning elementary school students' perceptions of support for recreational reading and the relations of these perceptions with reading motivation and habits. For the investigation, I created the Reading Support Survey (RSS) as well as employed established measures, which students completed in two sessions on separate days. The development of the RSS is described in this section; however, a pilot study that used a preliminary version of the RSS is detailed in Appendix A. The main purposes of the pilot study were to test the format of the survey and its administration conditions and contribute to the rationales of the hypotheses tested in the dissertation study.

Hypotheses

- 1) Children will distinguish their mothers, fathers, and friends as distinct sources of support for their recreational reading.
- 2) Children will perceive higher levels of reading support from their mothers than from their fathers or friends.
- 3) Regarding levels of perceived reading support, reading motivation and frequency, (a) girls will perceive greater reading support and show a more positive profile of reading motivation and frequency than boys, and (b) fourth-graders will report higher reading support, reading motivation, and reading frequency than fifth-graders.
- 4) When perceived mother, father, and friend support for reading are examined individually, they will each relate positively to the intrinsic reading motivation

dimensions of autonomy and knowledge goals/interest, to competence beliefs in reading (the reading motivation dimension of efficacy/challenge) and to reading frequency.

- 5) When perceived mother, father, and friend support for reading are examined individually, they will each relate negatively to the extrinsic reading motivation dimensions of competition and recognition.
- 6) When perceived mother, father, and friend support for reading are examined in combination with each other, (a) mother support will relate most strongly to children's reading motivation and frequency, but (b) perceived father and friend support will also contribute significantly to reading motivation and frequency.
- 7) When dimensions of perceived mother, father, and friend support are employed as grouping variables in cluster analyses (a) at least four groups of children will be apparent and (b) these groups will differ significantly in their levels of reading motivation and frequency. Children that perceive high levels of support from each socialization agent will show the most positive profiles of reading motivation and frequency, and those that perceive mixed levels of support will show more positive profiles of reading motivation and frequency than those perceiving low levels of support from each socialization agent.

Participants

The sample included fourth and fifth graders from three schools in a rural county of Maryland. Fourth- and fifth-graders were selected for three reasons. First, several of the studies reviewed in Chapter 2 that investigated parent involvement in older children's reading focused on these grade levels (e.g., Greaney & Hegarty, 1987; Hansen, 1969;

Neuman, 1986; Shapiro & Whitney, 1997); thus, studying fourth- and fifth-graders would make comparisons with previous research highly relevant. Second, fourth- and fifth-graders are near the end of elementary school, a time by which reading motivation and free time reading activity have been shown to have declined considerably (e.g., Jacobs et al., 2002; McKenna et al., 1995). Therefore, developing better understanding of factors associated (or not associated) with children's reading motivation and frequency at this age is particularly important. Lastly, fourth- and fifth-graders have not yet faced the transition to middle school or junior high, an experience associated in general with declines in perceptions of support from adults (Wigfield et al., 2006). Thus, if older children were studied, there might not be enough variation in the support variables to assess relations with the reading motivation and frequency variables; as it was, the pilot study indicated that fifth-graders' perceived reading support from fathers and best friends had relatively low mean levels, although considerable variation.

Permission to participate was sought from the parents/guardians of all fourth- and fifth-grade students in the participating schools (518 students). Signed consent forms were returned by 334 students (64%). The consent rate varied considerably across classrooms (from 30% to 96%), suggesting that teacher enthusiasm for the study affected the participation rate. All students with permission also completed an assent form.

Of the 334 students who participated, 32 reported living with a single caretaker or multiple caretakers all of the same gender. These students were excluded from all analyses since a major purpose of the study was to compare children's perceptions of their mothers and fathers (or primary male and female caretakers). The reasoning for this exclusion was that non-resident parents would probably, on average, have less

opportunity to interact with their children in the ways inquired about in the study and children would probably have less knowledge of any non-resident parents' reading habits, which were the focus of several survey items. Since all but one child from single-caretaker households indicated that their single caretaker was female, the means for father items might especially be affected if these students were included. On average participants in the final sample of 302 students reported living with 2 parents or other caregivers, 1 brother, and 1 sister. As shown in Table 1, other demographic characteristics of the final sample mirrored those of the combined population of the three schools from which participants were recruited (Maryland Report Card, 2008). Of note, however, the final sample contained a slightly larger proportion of females versus males, while the opposite was true for the school population. Also, a slightly disproportionate number of fifth-graders versus fourth-graders participated given the relative number of students in these two grades in the schools.

As detailed in the procedure section, the study took place in two sessions in each participating classroom, with 285 of the 302 students completing Session 1 and 292 students completing Session 2. For *both* sessions, 275 students were present; i.e., 27 students missed one of the two sessions. The sample size for each analysis varies, therefore, depending on whether it involved measures from Session 1 or 2, or both (and due to other missing data).

Table 1

Demographic Characteristics of Students in Final Sample and in Participating Schools

Characteristic	Final sample (%)	School population (%)
Gender		
Male	46	53
Female	54	47
Grade		
Fourth	43	49
Male (% of fourth-graders)	42	—
Female (% of fourth-graders)	58	—
Fifth	57	51
Male (% of fifth-graders)	49	—
Female (% of fifth-graders)	51	—
Ethnicity		
African-American	6	10
American Indian	<1	<1
Asian-American	<1	1
Hispanic	2	2
Non-Hispanic White	82	87
Other/mixed	1	—
Unspecified	8	—
Free and reduced price meals	—	19
Limited-English proficiency	—	<1
Special education	—	17

Note. The school population percentages are based on the total number of students in the three participating schools, with the exception that the grade level percentages are based only on the number of fourth- and fifth-graders in the schools.

The analysis techniques of the present study that required the largest sample sizes were the exploratory factor analysis and the comparisons of correlation coefficients. Many rules have been put forth regarding sample size for factor analysis. For example, Gorsuch's (1983) rule of five participants per variable, was satisfied because the sample included more than 170 participants, the minimum necessary since 34 variables were initially entered into the factor analysis. Satisfaction of Nunnally's (1978) rule of 10 participants per variable, though, would have required a sample of 340. However, according to others like Guadagnoli and Velicer (1988), the sufficiency of the sample size depends on the magnitude of the factor loadings. Given that results of the pilot study, which employed the small *N* of 55, nearly satisfied their guidelines, it seemed reasonable to expect that their guidelines would be fully satisfied by following Gorsuch's rule.

Based on power analyses, Cohen (1992) provided sample size guidelines for comparing correlation coefficients. To achieve power of .80, for a medium effect size, with alpha set at .05, 177 participants are necessary per group. With the group sizes actually obtained, it was possible to detect medium effects with power ranging from approximately .55 to .60 in the analyses that compared correlations for boys and girls (Rosenthal & Rosnow, 1991).

Procedure

I administered a packet of surveys and one reading test on a whole classroom-basis to all students who received parental permission to participate in the study (with the one exception that in one school, fourth-grade students from four classrooms were combined into two groups due to time constraints and the relatively low percentage of students in these classrooms participating.) Administration took place in two sessions in

each classroom. Either the classroom teacher or another school staff member was present during each session to assist with identification of participating students and the distribution of materials. During the administration of the surveys, the teachers/staff engaged in other activities at their desk or in another area of the classroom with non-participating students.

In Session 1, each participant received an envelope labeled with his/her name containing an assent form and a packet labeled Reading Survey Session 1 (containing a reading habits survey and the RSS). To maintain confidentiality, the packet was labeled with a code number and students were instructed not to put their name on the packet. After students completed the Session 1 packet and returned it to the envelope, I collected the envelopes and replaced the Session 1 packets with the Session 2 materials (a packet labeled Reading Survey Session 2, which contained a demographic survey and reading motivation questionnaire, and the reading test), likewise labeled with each student's code number. At the end of the study, the envelopes with the students' names were destroyed. Administration time for Session 1 ranged from 30-40 minutes; for Session 2 it ranged from 25-30 minutes. Sessions 1 and 2 took place between one and five days apart.

As may be seen in Appendix B, which contains the survey packets, at the start of each session, the students were given general directions and information about the study, as well as specific directions for each part of it. I read the assent form, survey directions and survey questions out loud to ensure that students at all reading levels could follow along. When the survey response options were identical for several consecutive questions, I read them out loud the first two times, and repeated them sporadically thereafter; whenever they changed, I again read them out loud two times. For the reading

test, I gave oral instructions and went over the sample and practice items with the students.

In addition to administering measures, I sought reading achievement data from school records. Personnel at each school provided Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Good & Kaminski, 2007) scores and, in addition, one school provided students' most recent report card grades in reading.

Variables and Measures

Development of the Reading Support Survey

The literature review in Chapter 2 closely guided the construction of the Reading Support Survey (RSS), including both its general design and the specific content of items that comprise it. As stated previously, the review demonstrated that one of the major gaps in current understanding of the socialization of older children's reading practices is that the roles of different socialization agents have not been explored in a systematic, comparative manner. Thus, the RSS was constructed so that each item could be answered separately with respect to the three socialization agents of interest – mothers, fathers, and friends. The survey directions specified how students should respond if they did not live with their mother or father; they could leave the items that referred to them blank, or, if another female or male caretaker lived with them, they could respond with respect to that person.

Since *mother* and *father* refer to individual figures in a child's life, I asked the students to think of an individual friend, rather than to think on the whole about their friends or classmates. In the pilot version of the survey (which is referred to henceforth as the P-RSS, and is contained in Appendix C), the term *best friend* was employed;

specifically, students were directed to “think about the person around your own age that you consider your best friend or at least a very good friend. It does NOT have to be someone you go to school with. Always think about the same person for Part C of each question.” However, for the dissertation study, these directions were revised to refer to a *good* friend, due to concerns that the term *best friend* refers to a reciprocated best friend in the sociometric friendship literature, and that it would be impractical to add a sociometric measure to the dissertation; specifically, students were directed to “think about the friend that you spend the most time with. It should not be your sister or brother.” In addition, students were asked to write down the first name of their friend, to reinforce that they should keep that person in mind throughout the survey.

From the review of studies specific to the domain of reading, I identified seven ways in which socialization agents may support older children’s recreational reading that have been considered by other researchers. These seven types of support appear in Table 2. Studies in which each type of support was examined or emerged as a possibly important factor in children’s reading are listed in the table.

Table 2

Forms of Reading Support Examined or That Emerged in Previous Studies of the Social Aspects of Older Children's Recreational Reading

Type of Reading Support	Studies
Involvement in selection/ recommendation of reading materials	Chandler, 1999; Edmunds & Bauserman, 2006; Hamston & Love*, Millard, 1997; Palmer, Codling, & Gambrell, 1994; Smith & Wilhelm, 2002; Strommen & Mates, 2004
Encouragement to read	Greaney & Hegarty, 1987; Hansen, 1969; Hamston & Love*; Neuman, 1986; Shapiro & Whitney, 1997; Strommen & Mates, 2004
Reading together (either the same or different materials at the same time and place)	Baker & Wigfield, 1999; Duchein & Mealey, 1993; Edmunds & Bauserman, 2006; Greaney & Hegarty, 1987; Hamston & Love*; Hansen, 1969; Ivey, 1999b; Millard, 1997; Neuman, 1986; Rowe, 1991; Shapiro & Whitney, 1997; Smith & Wilhelm, 2002; Wigfield & Guthrie, 1997
Participation in discussions about reading materials	Baker & Wigfield, 1999; Chandler, 1999; Edmunds & Bauserman, 2006; Guthrie, Schafer, Wang, & Afflerbach, 1995; Hamston & Love*; Ivey, 2001; Rowe, 1991; Smith & Wilhelm, 2002; Strommen & Mates, 2004; Wigfield & Guthrie, 1997
Serving as a model for reading (intentionally or unintentionally)	Chandler, 1999; Greaney & Hegarty, 1987 Hamston & Love*; Hansen, 1969; Lau & Cheung, 2001; Millard, 1997; Neuman, 1986; O'Rourke, 1979; Shapiro & Whitney, 1997; Smith & Wilhelm, 2002; Strommen & Mates, 2004

Note: * Hamston and Love (Hamston & Love, 2003; Love & Hamston, 2001, 2003, 2004) used the same sample in several publications, but several different types of data collection and analyses, and drew interrelated conclusions from this set of studies. In this table, "Hamston & Love" refers to one or more of their four publications.

Table 2, continued

Forms of Reading Support Examined or That Emerged in Previous Studies of the Social Aspects of Older Children's Recreational Reading

Type of Reading Support	Studies
Provision of reading materials	Chandler, 1999; Edmunds & Bauserman, 2006; Greaney & Hegarty, 1987; Hamston & Love*; Hansen, 1969; Ivey, 1999a, 2001; Millard, 1997; Neuman, 1986; Palmer, Codling, & Gambrell, 1994; Shapiro & Whitney, 1997; Smith & Wilhelm, 2002; Strommen & Mates, 2004
Provision of space or opportunity for reading	Greaney & Hegarty, 1987; Neuman, 1986; Shapiro & Whitney, 1997

Note: * Hamston and Love (Hamston & Love, 2003; Love & Hamston, 2001, 2003, 2004) used the same sample in several publications, but several different types of data collection and analyses, and drew interrelated conclusions from this set of studies. In this table, “Hamston & Love” refers to one or more of their four publications.

For the P-RSS, I wrote one item to tap each of the types of reading support that appear in Table 2, except *provision of space or opportunity for reading*. I excluded this type of reading support because it is not something that children's friends would be able to provide. In addition, I wrote one item that concerned how often children play word games and do word puzzles with other people. Only one parent who was interviewed by Hamston and Love (2003) mentioned that he believed he was supporting his child's reading in this way, but based on personal observation and reflection, it seemed like another possibly important form of reading support. I also wrote one item to tap children's perceived discouragement for reading, based on several studies which considered how socialization agents may sometimes undermine children's reading

motivation by discouraging them from reading certain types of materials or authors and through actions and words that generally discouraged them from reading as a leisure activity (Chandler, 1999; Hamston & Love, 2003; Love & Hamston, 2004; Smith & Wilhelm, 2002; Wells, 1978).

Thus, the P-RSS contained eight items concerning the involvement of others in children's recreational reading. For each item, children responded separately with regard to support from their mother/female caretaker, father/male caretaker, and best friend. For the first seven items, there were five response options: *Never*, *Rarely/less than once a month*, *Sometimes/a couple times a month*, *Often/a couple times a week*, *Very often/everyday*. For the eighth item, which asked students about the number of books they received in the past year as presents from each person, the response options were five numerical ranges.

In addition, each of the eight main items of the P-RSS contained two subparts. The first subpart asked children whether their response to the main item applied to books, magazines, web sites, and/or another type of reading material, which they could write in. For this part of each item, students could circle as many of the items that applied for them. This subpart was included because the literature review indicated that sometimes parents and friends may support reading of different types of materials to different extents.

In addition, to verify responses of *Often* and *Very often* to the main items, the second subpart of each item asked students to list up to three example titles or topics of books, magazines, websites or other reading materials if they had circled one of those two response options for the item.

The item content of the P-RSS was revised in five major ways for this dissertation. (1) Two items were eliminated. The item “How frequently do each of these people try to get you to STOP reading so you can do something else?” was eliminated as in the pilot it unexpectedly showed significant positive correlations with several items representing ways that mothers and fathers encourage reading. In addition, the three variants of this item had very non-normal distributions; plus, the best friend variant had such a low MSA value that it could not be included in the factor analysis. Furthermore, the mother and father variants of this item and all parts of “How frequently do you and each of these people play word games or do word puzzles together?” loaded together, creating a factor that was difficult to interpret. Partly for this reason, the item concerning frequency of playing word games and puzzles was the second item eliminated; its absence in the literature review and the need to consider time constraints for survey administration, especially once other changes were made, were also deciding factors; (2) One item was added “How do each of these people act when they see or hear about you reading in your free time?” (with the response options *Very unhappy*, *Sort of unhappy*, *Sort of happy*, *Very happy*) based on discussion of the pilot study findings with colleagues, who suggested that such an item might especially capture a way that a child’s non-primary caretaker has opportunity to show their support or lack thereof for the child’s reading; (3) The items concerning how often others help the child pick things to read and how frequently each socialization agent reads in their free time were each divided into three items, so that children would be asked how often each person helps them pick or reads in their own free time (a) books, (b) magazines and newspapers, and (c) web sites. Related to this third change, the subpart of each item on the original survey

that asked children whether their response to the main question applied to books, magazines, web sites, and/or another type of reading material was eliminated to reduce the complexity of the survey and its administration time. For the same reasons, while the original survey asked students to write in examples for most items, the revised version asks for examples for just two items, those regarding help from others picking books and reading with others. (4) A subpart was added to the items concerning talking about reading, reading with others, and receiving books as presents to tap children's affect related to these experiences, which may be as or more important than the frequency of these experiences (Baker et al., 1997). The subpart took the form of "How much do you enjoy _____?" and employed four response options: *Not at all*, *Not very much*, *A little*, *A lot*. Students were directed to skip the subpart if their answer for the corresponding main part was *Never* or *0*. (5) A question was added to the end of the survey that asked children to respond yes or no to the statement "Other people say and do things that lead me to read in my free time." Those who circled yes were also asked to choose, from a list of eight choices, who "has done this the most." This item was added to obtain a general sense of whether children view people that they know as an important influence on their reading. It also was added to provide insight into whether the three socialization agents that are the focus of the survey are the figures that children would most often cite as the greatest influences on their reading.

In sum, the revised RSS consisted of 12 main items. The first 11 items each consisted of a general question, which children responded to separately with regard to their fathers, mothers, and a good friend; one item additionally asked jointly about parents. Henceforth for simplicity and clarity, these 10 three-part items and 1 four-part

item are referred to as the 34 main items of the RSS. The subparts of these items that inquired about children's enjoyment of three of the foci of the general questions are referred to as the 10 affect items.

A number of minor changes were made to the wording of items on the P-RSS to clarify them for the dissertation study, based on questions children asked during the pilot study and the desire to make each question represent a highly specific situation: (1) "How frequently do others help you pick out things to read?" became "How frequently do each of these people suggest books (magazines and newspapers/web sites) for you to read in your free time?" to reflect the fact that by fourth and fifth grade, others may not be physically helping children pick out things to read as much as verbally recommending materials for them; (2) "How frequently do you and each of these people spend time reading together?" became "How frequently do you and each of these people read out loud together?" to specify that the item concerns reading aloud with another from the same material, rather than, for example, simply both being in the same room reading; (3) "In your free time" was added to the end of the question about talking about reading with others to remind students that they should be thinking about their recreational rather than their school reading. (4) Lastly, the wording of the item about receiving books as presents was changed slightly to make the item read more fluidly. In addition, this item was altered to ask how many books were received from parents as a joint gift, as well as from them individually, based on the examples children wrote in for the pilot study, which indicated that this often occurred.

Finally, in the directions, the instructions to think about all kinds of reading materials were eliminated. Instead, the instructions noted that items on the survey

concern books, magazines and newspapers, and web sites. Definitions were provided for these items, and I reminded students of these definitions during the administration of the survey.

All RSS items that have five response options were coded from 0 (representing *Never* or *0 books*) to 4 (representing *Very often/everyday* or *10 or more books*) when entered into SPSS. The four items with four response options were coded as 1 (*Very unhappy* or *Not at all*) to 4 (*Very happy* or *A lot*). As detailed in the next chapter, some analyses included individual RSS items, and some employed scales developed on the basis of the factor analysis used to test Hypothesis 1.

Demographics

A seven-item demographic survey labeled *About You* comprised the first part of Session 2. It included one item about gender, one about ethnicity, and five items about family make-up. The ethnicity item directed students to circle the one term that best described them; the response options were the terms used by the Maryland Report Card (2007) and “Other: _____.” The items concerning family make-up asked students to indicate how many older brothers, younger brothers, older sisters, and younger sisters live with them. Also, one item asked students to indicate the “grown-ups that you live with all or most of the time.” The response options were mother (or stepmother), father (or stepfather), grandmother, grandmother, and other grown-up who helps take care of you (followed by a line to write-in something more specific, such as aunt or uncle); students were directed to select as many options as applied to them. Since the RSS tells students to skip items about their mothers and fathers if they do not live

with them or another female or male caretaker, this item was used to check students' attention to that direction.

Reading Frequency

Before completing the RSS in Session 1, students completed a set of items entitled *Your Reading Habits*. These items asked students to rate how frequently they read four types of materials: information books, story books, magazines and newspapers, and web sites. As for most of the RSS items, there were five response options ranging from *Never* to *Very often/everyday*. These items changed in two respects from the pilot study: (1) "magazines" became "magazines and newspapers" because children frequently filled in newspapers as examples for the reading support items in the pilot study; (2) "books" was split into information and story books so that the possible differential relations of reading support to these genres could be examined.

These items were employed as individual variables in the analyses as they were not highly correlated and therefore would not form reliable scales if combined. In fact, the highest correlation within this set of items was .18 ($p \leq .01$), for information books and magazines/newspapers.

Reading Motivation

As the second activity in Session 2, students completed a modified form of the Perceptions of Reading Motivations Questionnaire (PRMQ). The PRMQ is based in part on the Motivations for Reading Questionnaire (MRQ; Wigfield & Guthrie, 1997), which measures 11 different possible dimensions of reading motivation. The PRMQ, however, includes some of the dimensions assessed by the MRQ and some additional motivation constructs related to the reading engagement model; because the engagement model is

part of this study's theoretical framework, the PRMQ was chosen as the main measure of motivation. Altogether, the PRMQ consists of 20 items divided into scales representing three reading motivation constructs: autonomy (four items), efficacy/challenge (seven items), and knowledge goals/interest (nine items). These constructs are the focus of the PRMQ because the motivational practices specified in the engagement model are particularly intended to impact them. The items were read aloud while students followed along, selecting one of four response items for each item: *Very different from me (1)*; *A little different from me (2)*; *A little like me (3)*; *A lot like me (4)*.

For this dissertation, two items were removed from the PRMQ knowledge goals/interest scale ("I like to read about animals or things I have observed in science" and "I often read about things I observe in science). These items were removed to reduce the focus on science in this scale; the PRMQ has primarily been used to assess reading motivations in students who have participated in an instructional intervention that joins the reading and science curriculums. Because the participants in the dissertation study were not involved in such an intervention, it seemed appropriate to reduce the emphasis on science reading in the scale, so that only one of seven items pertained to science.

In addition, competition and recognition scales, two dimensions assessed by the MRQ, were added to the PRMQ in order to have measures of extrinsic reading motivation included in the study. The scales were those constructed in Baker and Wigfield's (1999) study of the MRQ, which they administered to 140 fifth-graders and 230 sixth-graders in six elementary schools. The competition scale consists of four items; the recognition scale, five. The items from these scales were interspersed semi-randomly among the 18 PRMQ items bringing the total number of motivation items to 27. See

Appendix B for the PRMQ as administered to the sample, and Appendix D for categorization of PRMQ items by their scales.

One other modification to the PRMQ was an alteration to the directions. Students were told that they should think about their free-time reading rather than their reading for school assignments while responding to most items (i.e., unless the item referred to school or class). In this way, the questionnaire cohered better with the RSS which focuses on support for recreational reading.

Students' responses to the PRMQ items for each scale were summed, after reverse coding three negatively worded items. Internal-consistency reliability (Cronbach's α) was .62 for autonomy, .81 for efficacy/challenge, .79 for knowledge goals/interest, .79 for competition, and .72 for recognition. The relatively low reliability for autonomy should be kept in mind when interpreting analyses involving this variable.

It should also be noted why the PRMQ was selected for use rather than the other motivation measure employed in the pilot, the Group Reading Motivations Questionnaire (GRMQ). The primary reason is that the PRMQ was designed for administration to whole classrooms at once, while the GRMQ was designed for administration to small groups of students. In addition, the PRMQ constructs generally showed stronger relations with the support variables in the pilot study. Also, there is some overlap among the PRMQ and GRMQ items, which could complicate interpretation of findings if both full measures were employed.

Reading Achievement

Overview. Three measures of reading achievement were obtained for use as control variables in the analyses of the relations of perceived reading support with

reading motivation and frequency. They included two measures of reading fluency and reading grades.

WJ III reading fluency test. As the third and final activity of Session 2, participants completed the reading fluency test from the WJ III Diagnostic Reading Battery (henceforth abbreviated as WJ III Fluency; Woodcock, Mather, & Schrank, 2004). This test may be considered a measure of syntactic reading fluency, defined as accuracy and speed in processing phrase and sentence units of text (Klauda & Guthrie, 2008). It consists of 98 simple sentences (e.g., “Ants are small.” and “A puppy grows into a cat.”). Students are directed to read as many of these sentences silently as they can within three minutes, circling Y for “yes” or N for “no” after each sentence, depending on whether it is true or false. Scores on the test equal the number of correct responses minus the number of incorrect responses. For analysis, raw scores were converted to standardized scores based on national samples using the WJ III Scoring and Reporting Program (Schrank & Woodcock, 2004). Fourth- and fifth-graders’ scores were converted using the norms for grade levels 4.5 and 5.5, respectively, since they completed the test about midway through the school year. These norms are based on an average of 100 and a standard deviation of 15.

It should be noted that the publishers provide instructions for administering the test individually or to small groups of students; however, as in previous research in which the test has been utilized (Klauda & Guthrie, 2008), the instructions were adapted for administration of the test on a classroom basis.

The WJ III Fluency test has strong psychometric properties. The one-year test-retest reliability for students who first take the test at ages 8-10 is .78. For 9-13 year olds,

performance on the test correlates .55 and .64 with, respectively, the passage comprehension and reading vocabulary tests of the WJ III (Schrank, Mather, & Woodcock, 2004). In research involving 270 fifth-graders and whole class administration (Klauda & Guthrie, 2008), test-retest reliability across three months was .90. Furthermore, at two test points scores correlated .71 and .75 with performance on the Gates-MacGinitie reading comprehension test (MacGinitie, MacGinitie, Maria, & Dreyer, 2000). The WJ III Fluency thus was selected for use in this study because it is a brief yet reliable and valid measure of reading achievement.

Dynamic Indicators of Basic Early Literacy Skills. Each school provided students' oral reading fluency scores from the Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Good & Kaminski, 2007). In these schools, DIBELS is administered three times per year; the scores provided for this study were from the second assessment. DIBELS Oral Reading Fluency (henceforth abbreviated as DIBELS ORF) measures oral reading rate and accuracy at the word level. During this individually administered test, students read aloud from a passage at the goal level for their grade level for one minute. The DIBELS ORF score is the number of words read correctly in that time (including errors self-corrected within three seconds); omitted words, substitutions, and three-second or longer hesitations are counted as errors. The test is based on Deno and colleagues' development of Curriculum-Based Measurement (e.g., Deno, 1985; Deno & Fuchs, 1987).

For the second (middle of the year assessment), fourth-graders are considered at risk if they score less than 83, at some risk for scores of 83-104, and at low risk for scores equal to or greater than 105. Fifth-graders are considered at risk if they score less than 94,

at some risk for scores of 94-114, and at low risk for scores equal to or greater than 115. These benchmarks (DIBELS Benchmark Goals, n.d.) are based on analyses of Fuchs, Fuchs, Hamlett, Walz, & Germann (1993) and Hasbrouck and Tindal (1992). There is limited published information concerning reliability and validity specifically for the fourth- and fifth-grade level passages. A study by Vander Meer, Lentz, and Stollar (2005) involving 350 students showed that DIBELS ORF correlated at .61 and .65 at different time points with achievement on a state reading achievement test of fiction and non-fiction reading comprehension. The correlation of students' performance on the DIBELS at the two test points was not presented. In a study, however, that involved over 35,000 third graders who took the DIBELS ORF three times with two-three month intervals, test-retest correlations ranged from .88 to .92. (Roehrig, Petscher, Nettles, Hudson, & Torgeson, 2008). In addition in this study, DIBELS ORF correlated between .66 and .71 with a standardized measure (Stanford Achievement Test) and a state assessment of reading comprehension; these correlations are very similar to those obtained in other studies, especially at the third grade level, of the correlation between DIBELS ORF and other reading comprehension measures and broader assessments of reading achievement (Schilling, Carlisle, Scott, & Zeng, 2007).

Reading grades. Participants' reading grades were also sought from each of the three schools. This measure was desired because grades are an indicator of achievement that students may be more aware of and knowledgeable of the meaning of than their achievement test scores, and thus may be more closely tied to their motivation. However, only one school agreed to provide this data. The grades, which were from the second marking period of the school year, were reported as A, B, C, or D and coded,

respectively, as 4, 3, 2, and 1. This variable was used in limited analyses, since it was only available for 94 students.

Chapter 4: Results

The analyses for the current study were conducted, and are presented, in the order of the seven hypotheses. A variety of item-level and composite variables were used in the analyses; these variables can be grouped into six sets: (1) the 34 main items of the RSS; (2) the ten affect items of the RSS; (3) the five dimensions of reading motivation of the PRMQ; (4) the four items concerning children's recreational reading frequency; (5) the three reading achievement variables. In addition, a set of variables representing dimensions of reading support was developed from the factor analysis used to test Hypothesis 1. In the following pages, Tables 3-7 display descriptive statistics for sets 1-5, while those for the reading support dimensions are presented in the discussion of Hypothesis 1.

For the main items of the RSS for which scores could range between 0 and 4, four item means for the full sample fell below 1.00, 17 fell between 1.00 and 2.00, and 10 fell between 2.00 and 3.00. For the three main items that had a possible range of 1-4 and the affect items, which had the same possible range, the means were toward the high end of the scale, ranging from 2.97 to 3.80. Mean scores for the full sample on the motivation dimensions were in the middle to high range of each scale, and mean scores on the reading frequency items were in the low-middle to high-middle range (1.78 to 2.90 on 0-4 scales). Lastly, the descriptive statistics for reading achievement indicated that the sample was performing slightly above the average for mid-year 4th and 5th graders on the WJ III Fluency test, the average DIBELS score was in the low risk category, and the average reading grade was nearest to a B.

Table 3

Descriptive Statistics for 34 Main Items of the RSS

Item	Full sample			Boys			Girls			4 th graders			5 th graders		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Suggests books															
Father	278	1.81	1.29	127	1.76	1.31	151	1.86	1.27	122	1.84	1.26	156	1.79	1.32
Mother	280	2.54	1.23	127	2.52	1.22	153	2.55	1.24	122	2.59	1.26	158	2.49	1.20
Friend	278	1.22	1.28	126	1.00	1.29	152	1.40	1.25	121	1.31	1.35	157	1.15	1.22
Suggests mags./news.															
Father	281	1.09	1.25	128	1.25	1.30	153	.95	1.19	122	.93	1.20	159	1.21	1.27
Mother	281	1.23	1.17	128	1.25	1.21	153	1.22	1.14	122	1.16	1.12	159	1.28	1.20
Friend	279	1.03	1.25	127	.81	1.24	152	1.21	1.23	121	.98	1.23	158	1.06	1.27
Suggests web sites															
Father	281	.92	1.11	128	.88	1.15	153	.95	1.07	122	.88	1.06	159	.96	1.14
Mother	281	1.10	1.16	128	.98	1.16	153	1.20	1.16	122	1.17	1.25	159	1.04	1.09
Friend	280	.98	1.15	128	1.03	1.23	152	.93	1.09	122	.92	1.17	158	1.02	1.14

Note. Scores could range from 0-4 for all items, except for those concerning how happy each socialization agent is about the child reading; for those items, the possible score range was 1-4. Mags./news.= magazines and newspapers.

Table 3, continued

Descriptive Statistics for 34 Main Items of the RSS

Item	Full sample			Boys			Girls			4 th graders			5 th graders			
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	
Encourages reading																
Father	278	2.33	1.37	126	2.27	1.41	152	2.38	1.35	122	2.35	1.35	156	2.31	1.39	
Mother	279	2.88	1.21	126	2.84	1.15	153	2.92	1.26	122	2.89	1.23	157	2.88	1.19	
Friend	279	1.13	1.20	126	.93	1.15	153	1.29	1.23	122	1.27	1.26	157	1.01	1.15	
Reads books																
Father	279	1.87	1.37	128	1.98	1.48	151	1.78	1.27	121	1.91	1.40	158	1.85	1.36	
Mother	280	2.60	1.31	127	2.72	1.33	153	2.49	1.30	122	2.43	1.34	158	2.72	1.28	
Friend	277	2.43	1.27	125	2.14	1.52	152	2.67	1.18	121	2.31	1.29	156	2.53	1.25	
Reads mags./news.																
Father	279	2.35	1.37	127	2.43	1.33	152	2.28	1.41	121	2.04	1.47	158	2.58	1.25	
Mother	281	2.28	1.23	128	2.32	1.20	153	2.24	1.25	122	2.10	1.23	159	2.42	1.21	
Friend	273	1.56	1.21	124	1.58	1.27	149	1.54	1.16	118	1.38	1.18	155	1.70	1.21	

Note. Scores could range from 0-4 for all items, except for those concerning how happy each socialization agent is about the child reading; for those items, the possible score range was 1-4. Mags./news.= magazines and newspapers.

Table 3, continued

Descriptive Statistics for 34 Main Items of the RSS

Item	Full sample			Boys			Girls			4 th graders			5 th graders			
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	
Reads web sites																
Father	281	1.77	1.38	128	1.68	1.42	153	1.84	1.35	122	1.70	1.45	159	1.81	1.34	
Mother	281	2.01	1.37	128	1.90	1.42	153	2.11	1.32	122	2.02	1.47	159	2.01	1.29	
Friend	274	1.56	1.29	126	1.58	1.30	148	1.54	1.28	120	1.43	1.34	154	1.66	1.24	
Happy about reading																
Father	279	3.62	.54	128	3.55	.57	151	3.68	.51	121	3.60	.56	158	3.63	.53	
Mother	280	3.80	.47	128	3.75	.50	151	3.85	.43	121	3.79	.54	158	3.82	.40	
Friend	270	2.97	.70	121	2.81	.73	149	3.11	.64	119	2.93	.70	151	3.01	.70	
Talks about reading																
Father	280	2.06	1.20	127	2.02	1.20	153	2.10	1.20	121	2.18	1.20	159	1.97	1.19	
Mother	279	2.57	1.13	127	2.42	1.09	152	2.70	1.14	120	2.67	1.09	159	2.50	1.15	
Friend	280	1.67	1.32	127	1.50	1.40	153	1.81	1.24	121	1.68	1.39	159	1.67	1.28	

Note. Scores could range from 0-4 for all items, except for those concerning how happy each socialization agent is about the child reading; for those items, the possible score range was 1-4.

Table 3, continued

Descriptive Statistics for 34 Main Items of the RSS

Item	Full sample			Boys			Girls			4 th graders			5 th graders		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Reads aloud															
Father	280	1.06	1.17	128	.98	1.16	152	1.12	1.18	121	1.22	1.23	159	.93	1.11
Mother	277	1.64	1.33	128	1.50	1.35	149	1.75	1.31	120	1.86	1.40	157	1.47	1.25
Friend	279	.97	1.20	127	.80	1.25	152	1.12	1.14	121	1.06	1.33	158	.91	1.10
Gives books as presents															
Parents together	280	1.85	1.30	127	1.89	1.34	153	1.81	1.26	121	2.04	1.33	159	1.70	1.26
Father	279	1.06	1.03	126	1.09	1.09	153	1.04	.98	120	1.21	1.19	159	.95	.87
Mother	277	1.72	1.23	126	1.71	1.23	151	1.73	1.24	120	1.91	1.26	157	1.57	1.20
Friend	279	.53	.88	127	.45	.88	152	.60	.87	121	.64	1.02	158	.44	.74

Note. Scores could range from 0-4 for all items, except for those concerning how happy each socialization agent is about the child reading; for those items, the possible score range was 1-4.

Table 4

Descriptive Statistics for Ten Affect Items of the RSS

Item	Full sample			Boys			Girls			4 th graders			5 th graders		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Enjoys talking about reading with															
Father	246	3.16	.79	114	3.06	.90	132	3.25	.67	110	3.21	.81	136	3.13	.76
Mother	265	3.36	.71	121	3.21	.76	144	3.49	.65	115	3.43	.70	150	3.31	.72
Friend	208	3.17	.80	85	3.00	.87	123	3.28	.73	88	3.19	.81	120	3.15	.80
Enjoys reading aloud with															
Father	155	3.23	.76	66	3.20	.71	89	3.26	.81	74	3.31	.81	81	3.16	.72
Mother	202	3.37	.74	84	3.24	.79	118	3.47	.69	88	3.49	.71	114	3.28	.75
Friend	132	3.27	.77	45	3.27	.75	87	3.26	.78	53	3.36	.81	79	3.20	.74

Note. The possible score range for all items was 1-4.

Table 4, continued

Descriptive Statistics for Ten Affect Items of the RSS

Item	Full sample			Boys			Girls			4 th graders			5 th graders		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Enjoys getting books from															
Parents together	235	3.57	.63	106	3.51	.65	129	3.61	.62	104	3.59	.66	131	3.55	.63
Father alone	194	3.54	.64	86	3.47	.66	108	3.60	.61	84	3.57	.68	110	3.52	.60
Mother alone	237	3.68	.52	107	3.60	.56	130	3.75	.47	108	3.71	.51	129	3.66	.52
Friend	98	3.59	.67	36	3.64	.64	62	3.56	.69	46	3.70	.66	52	3.50	.67

Note. The possible score range for all items was 1-4.

Table 5

Descriptive Statistics for Reading Motivation Scales

Dimension	Full sample			Boys			Girls			4 th graders			5 th graders		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Autonomy	291	12.92	2.51	133	12.32	2.65	158	13.42	2.27	126	13.19	2.52	165	12.71	2.49
Efficacy/challenge	287	22.91	4.16	130	22.83	4.08	157	22.99	4.25	125	22.23	3.99	162	22.67	4.29
Knowledge	288	20.04	4.63	131	20.05	4.82	157	20.02	4.48	124	20.56	5.04	164	19.64	4.27
goals/interest															
Competition	287	10.95	3.54	132	10.98	3.78	155	10.92	3.33	122	11.69	3.37	165	10.40	3.57
Recognition	290	15.93	3.16	133	15.33	3.40	157	16.43	2.86	126	16.43	3.08	164	15.54	3.18

Note. Possible score ranges are 4-16 for autonomy; 7-28 for efficacy/challenge; 7-28 for knowledge/goals interest, 4-16 for competition; and 5-20 for recognition.

Table 6

Descriptive Statistics for Recreational Reading Frequency Items

Dimension	Full sample			Boys			Girls			4 th graders			5 th graders		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Information books	283	2.17	0.93	128	2.22	.90	155	2.12	.96	121	2.29	.99	162	2.07	.88
Story books	283	2.90	0.91	129	2.70	.97	154	3.08	.83	122	3.02	.84	161	2.81	.96
Mags./news.	283	2.03	1.17	128	2.11	1.20	155	1.96	1.14	121	1.81	1.11	162	2.19	1.19
Web sites	283	1.78	1.23	128	1.90	1.32	155	1.69	1.15	121	1.85	1.25	162	1.73	1.22

Note. The possible score range for all dimensions was 0-4. Mags./news.= magazines and newspapers.

Table 7

Descriptive Statistics for Reading Achievement Variables

Dimension	Full sample			Boys			Girls			4 th graders			5 th graders		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
WJ III Fluency	289	105.83	13.26	133	104.53	13.58	156	106.93	12.93	124	105.82	11.89	165	105.83	14.24
DIBELS ORF (WCPM)	298	126.06	36.30	139	123.12	35.66	159	128.63	36.77	130	119.15	30.25	168	131.40	39.63
Reading grade	94	3.38	.73	43	3.23	.81	51	3.51	.64	40	3.48	.60	54	3.31	.73

Note. WCPM = words correct per minute.

Hypothesis 1

Overview

The first hypothesis stated that the students would perceive their mothers, fathers, and friends as distinct sources of support for their recreational reading. This hypothesis was tested through factor analysis of the 34 main items of the RSS. The 10 affect items were not included in this analysis, since students were directed to respond to these items selectively; that is, if students did not experience the corresponding main item (i.e., selected *Never* or *0* for their answer), logically they could not rate how much they enjoyed it.

Choice of Factor Analytic Method

Exploratory factor analysis (EFA) was employed to determine whether there were a set of latent constructs underlying the items on the RSS that could be examined in relation to motivational constructs. This type of analysis was appropriate as opposed to principal components analysis (PCA) as the latter does not permit modeling of the structure of correlations among a set of variables, and is considered primarily a data reduction method (Pett, Lackey, & Sullivan, 2003). EFA was also appropriate as opposed to confirmatory factor analysis (CFA), since CFA should only be used when there is a strong theoretical or empirical base to devise models *a priori* for testing (Fabrigar, Wegener, MacCallum, & Strahan, 1999; Pett et al., 2003). Although the pilot study had indicated that three factors underlay the items of the P-RSS, one representing reading support from each of the three socialization agents under study, it had employed a very small sample for factor analysis; furthermore, the P-RSS items, as described in the

previous chapter, were revised considerably for the dissertation study. In other words, the pilot study did not provide a strong enough base to warrant CFA.

As recommended by Pett et al. (2003), the EFA method of Principal Axis Factoring (PAF) was employed, rather than one of the other EFA methods available in SPSS. PAF is the most commonly employed EFA method (Pett et al., 2003), and there were no clear advantages to choosing a different method for the current analysis.

Sample Size Requirements

One key issue to consider when conducting factor analysis is sample size. As mentioned in Chapter 3, there are a variety of guidelines for the sample size required to perform factor analysis, several based on the ratio of participants to items or variables. For example, Gorsuch (1983) recommended at least five participants per variable, while Nunnally (1978) recommended at least 10. The ratio of participants to items in this analysis was 8.26, easily meeting Gorsuch's (1983) rule, but not Nunnally's (1978). More recently, however, researchers have contended that sample size should be considered in the context of factor reliability; that is even a relatively small sample size may be sufficient, if several variables load highly on it, and even an extremely large sample does not guarantee factor reliability (Pett et al., 2003). Therefore, the sufficiency of the sample size is discussed again after the results of the analysis are presented, with regard to guidelines formulated by Guadagnoli and Velicer (1988).

Preparatory Steps for Factor Analysis

First, the data of the 285 students who completed the RSS was examined for missing values. Altogether, the amount of missing data was 1.2%, or 116 of 9,690 potential responses (34 items x 285 participants). Two participants skipped all items

pertaining to friends (and did not fill in a friend's name when requested to do so) and therefore their remaining data was eliminated. In addition, one participant skipped all items pertaining to others' reading habits, and one participant skipped nearly half of the items pertaining to others' reading habits and all items about receiving books as presents; these two cases were also eliminated. Given the overall low level of missing data, either mean imputation or pairwise deletion would have been suitable for handling the remainder of the missing data (Hair et al., 2006). Mean imputation was chosen because a complete data set was needed for two of the tests used to determine the number of factors to extract, and because factor analysis with an incomplete data set sometimes produces out of range values for correlations and eigenvalues (Hair et al., 2006).

The data set was examined for outliers according to procedures outlined by Hair et al. (2006); it should be noted, however, that the use of Likert-like scales made the presence of outliers unlikely because they limited the potential for extreme responses. Examination of students' standardized scores on each item, to detect univariate outliers, indicated that two students gave unusually low responses to the item about their mothers' reaction to their reading. Examination of Mahalanobis distance values, however, suggested that neither of these cases, nor any other case, was a multivariate outlier. Therefore, the two univariate outliers were considered valid segments of the population and retained in the data set.

Finally, the statistical assumptions of factor analysis were considered. Because the RSS employs Likert-like scales, these scales were assumed to be essentially interval-level, thereby satisfying the assumption of interval-level measurement. Regarding the assumption of multivariate normality, as Garson (n.d.) and Hair et al. (2006) explain, this

assumption is not critical for most forms of factor analysis, since they do not involve significance testing. However, because nonnormality can reduce correlations between variables and their factor loadings, the skewness and kurtosis values of each item were examined. The ratio of skewness and kurtosis to the standard error for these values was relatively high for most items, suggesting that nonnormality may have indeed attenuated the correlation coefficients and factor loadings observed in this study. However, because transforming variables with high skewness and kurtosis values did not impact the pilot study analyses and generally complicates the interpretation of analyses, transformations were not undertaken here.

Evidence of Correlation Matrix Factorability

Three tests were conducted on the correlation matrix for the 34 main items of the RSS to determine whether factor analysis was warranted (See Appendix E for the correlation matrix). Bartlett's test of sphericity (Bartlett, 1950) produced a Chi square value of 3729.15 ($p < .000$, 561 df), thereby enabling rejection of the null hypothesis that the correlation matrix was an identity matrix. This meant that the number of factors obtained would be less than the number of variables inputted. The Kaiser-Meyer-Olkin (KMO) test, which uses the correlations and partial correlations of the focal variables, produced a value of .83, which is "meritorious" according to criteria developed by Kaiser (1974), indicating that the sample size was sufficient relative to the number of variables in the analysis for factor analysis to proceed. Lastly, all 34 individual Measures of Sampling Adequacy (MSAs) were above Kaiser's minimal criterion of .60, with the lowest value being .71, for *father reads magazines/newspapers*, meaning that each item correlated strongly enough with other items for factor analysis to proceed.

Process of Deciding How Many Factors to Extract

In line with current recommendations, the decision of how many factors to extract was based on Velicer's minimum average partial (MAP) procedure, parallel analysis (PA), and examination of a scree plot (Fabrigar et al., 1999; Garson, n.d.; Hayton, Allen, & Scarpello, 2004; Lance, Butts, & Michels, 2006; O'Connor, 2000; Preacher & MacCallum, 2003; Velicer, Eaton, & Fava, 2000). The MAP and PA tests are well-regarded due to strong empirical evidence of their accuracy (based primarily on simulation studies). The scree test offers a means of visualizing the variance accounted for by different numbers of factors. Though it ultimately relies on the judgment of the researcher, it is considered a generally accurate method, especially when strong factors are present, (Preacher & MacCallum, 2003; Velicer et al., 2000), and multiple judges show interrater reliability in using it (see Hayton et al., 2004). These three tests have become greatly preferable to the widely-employed Kaiser criterion (or K1 rule) of retaining all factors with eigenvalues greater than 1 due to several problems with the K1 rule, including but not limited to the following: (1) the K1 rule is rather subjective; that is, it seems arbitrary to consider a factor with an eigenvalue just above 1 important, but not a factor with an eigenvalue just below 1; (2) the K1 rule very frequently has been found to lead to overfactoring or underfactoring; (3) the theoretical proof for the K1 rule applies only to correlation matrices that perfectly represent the population, not the typical sample matrices which are affected by sampling error.

Following Pett et al. (2003), the MAP, PA, and scree tests were conducted on the basis of an initial PCA because this procedure, unlike PAF, permits as many components to be extracted as there are variables. Table 8 displays the eigenvalues obtained from this

analysis. The scree plot was obtained through the standard SPSS factor analysis procedure, while running the MAP and PA procedures required the use of SPSS syntax developed by O'Connor (2000; n.d.).

Table 8

Total Variance Explained by PCA with 34 Components Extracted

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	8.49	24.97	24.97
2	2.34	6.87	31.84
3	2.21	6.51	38.35
4	1.82	5.34	43.68
5	1.64	4.83	48.51
6	1.46	4.28	52.79
7	1.27	3.72	56.51
8	1.18	3.45	59.99
9	1.16	3.41	63.40
10	1.04	3.05	66.45
11	.94	2.76	69.21
12	.86	2.54	71.75
13	.83	2.44	74.19
14	.75	2.21	76.39
15	.71	2.08	78.48
16	.67	1.98	80.45
17	.62	1.83	82.29
18	.57	1.66	83.95
19	.53	1.57	85.52

Table 8, continued

Total Variance Explained by PCA with 34 Components Extracted

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
20	.50	1.46	86.98
21	.47	1.39	88.37
22	.46	1.36	89.72
23	.43	1.26	90.99
24	.40	1.19	92.17
25	.38	1.12	93.29
26	.34	.99	94.28
27	.32	.93	95.20
28	.30	.87	96.08
29	.29	.84	96.92
30	.25	.72	97.64
31	.24	.71	98.34
32	.22	.64	98.98
33	.19	.57	99.55
34	.15	.45	100.00

The MAP test involves determining the factor extraction step at which all common variance has been removed from the correlation matrix and only unique variance remains (Velicer et al., 2000). Both original (Velicer, 1976) and revised (Velicer, 2000) versions of the test are currently in use. The difference between them is that the former involves identifying the lowest average squared partial correlation, whereas the latter involves identifying the lowest average partial correlation raised to the

fourth power. In the present study, the original test indicated that three factors should be extracted, while the revised version indicated four.

PA, originated by Horn (1965), compares the eigenvalues derived from a real data set with the average of random eigenvalues derived from many data sets generated by random processes, with all random data sets having the same number of cases and variables as the real data set. The number of eigenvalues from the real data set that are larger than the average eigenvalues from the random data sets is the number of factors that should be extracted. In other words, this test indicates the number of factors that account for more variance than could be expected by chance (Preacher & MacCallum, 2003). For the present study, PA was run using a newer program by O'Connor (n.d.) that allows the random data to follow the distribution of the real data rather than a normal distribution; this test indicated that six factors should be extracted.

The scree plot consists of points, connected by a line, that indicate the amount of variance accounted for by each factor or component extracted in the analysis. To interpret a scree plot, one looks for a distinct break in the line, that is, a point where the slope changes and the line flattens out. The points at the break and to the right of it represent what Cattell (1966), who developed this technique, termed scree, or the rubble at the foot of a mountain. The number of points to the left of the break indicate the number of meaningful factors (Pett et al., 2003). Sometimes the scree plot is difficult to interpret either because it does not have a clear elbow or because it has multiple ones. This was the case in the current study; the scree plot could be interpreted as indicating that either three or six factors were meaningful (see Figure 1). The Cattell-Nelson-Gorsuch objective

scree technique (Cattell, 1966; Gorsuch, 1983), which involves comparing the slopes for sets of adjacent eigenvalues, likewise supported three or six factors.

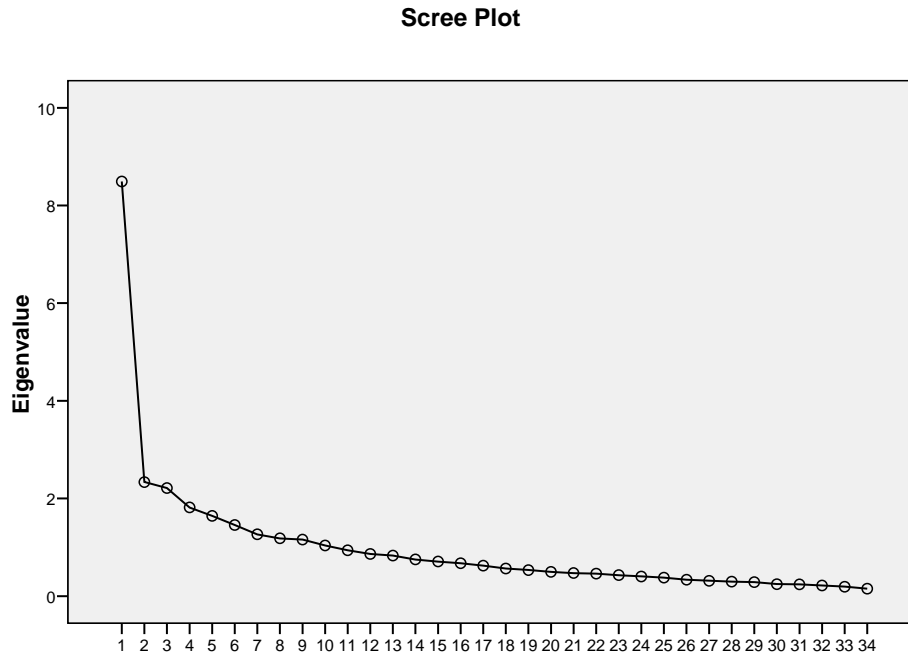


Figure 1. Scree plot obtained with 34 components extracted.

Given that the MAP, PA, and scree tests indicated that three, four, or six factors might be appropriate to extract, I decided to obtain solutions with each of these numbers of factors and select a final solution based on their comparative interpretability. I also decided to extract a solution with five factors, based on findings that when PA errs, it tends to overestimate, most often by one factor (Silverstein, 1987; Zwick & Velicer, 1986), and that the MAP test, or at least the earlier version of it (Velicer, 1976), tends to underestimate when it errs (O'Connor, 2000).

PAF Analyses

PAF was used to conduct the 3-, 4-, 5-, and 6-factor analyses. To improve interpretability, each initial solution was rotated using oblique rotation methods given that such methods, as opposed to orthogonal methods, allow factors to correlate, and correlations among the factors were indeed expected. Specifically, the Direct Oblimin method was employed; no clear-cut rules exist for selecting among oblique rotational methods (Hair et al., 2006), but given that this method provided somewhat clearer results than the Promax method in the pilot study it seemed warranted to use it in the current analyses.

In the interpretation of each solution, the focus was on the factor pattern matrix. There is some disagreement in the factor analysis literature as to whether this matrix, in which the loadings represent the relations of the items to the factors having controlled for the relations among the factors, or the factor structure matrix, in which the loadings represent the zero-order correlations of the variables with the factors, should be the focus when interpreting the rotated solution (Pett et al., 2003). In line with those who contend that a pattern of loadings is usually easier to discern in the pattern matrix (Hair et al., 2006; Tabachnick & Fidell, 2001), my reason for focusing on the factor pattern matrices was that they appeared easier to interpret than the structure matrices. Since others, including Pett et al. (2003), assert that it is preferable to interpret structure matrices since they are unaffected by changing the magnitude of correlations among factors, these matrices are also presented.

To select the most appropriate solution of the 3-, 4-, 5-, and 6- factor solutions, several criteria were employed, with the most important consideration being the overall

clarity and meaningfulness of each factor in the solution; that is, the extent to which the items that loaded significantly on a factor were conceptually related to each other.

Likewise, overall solution parsimony and the extent to which scales could be derived that would be relevant and interesting to use in further analyses were important concerns. In addition, the numbers of items that loaded on each factor were considered, as well as, in line with Thurstone's (1947) simple structure criteria, the items that did not load on any factor, and that loaded on multiple factors. Loadings of .30 or higher were considered the minimum for significance, based on Hair et al.'s (2006) guidelines.

Based on these criteria, the 4-factor solution was selected as the final solution.

The factor, pattern, structure, and factor correlation matrices for this solution are displayed in Tables 9-13, while Table 14 summarizes all four solutions that were obtained. In addition, Appendix F contains all matrices relevant to the 3-, 5-, and 6-factor solutions.

In the 4-factor solution, 11 items representing mothers' and fathers' support for reading books and reading in general (i.e., items not referencing a particular type of reading material) loaded singularly on Factor 1; nine items representing mothers' and fathers' support for magazine reading and mothers', fathers' and friends' support for reading web sites loaded singularly on Factor 2; seven items representing friends' support for reading books and magazines and for reading in general loaded singularly on Factor 3; and 4 items representing parents' individual and joint giving of books as presents and mothers' frequency of reading aloud with the focal child loaded singularly on Factor 4. No items had zero loadings of .30 or higher. Three items loaded on multiple factors: *friend suggests magazines, friend suggests web sites, and friend gives books as presents.*

Table 9

Factor Loadings Obtained with Extraction of Four Factors Using PAF (Without Rotation)

Variable	Factor			
	1	2	3	4
Father suggests books	.64			
Mother suggests books	.64			
Friend suggests books	.54		-.36	
Father suggests magazines	.45		.23	
Mother suggests magazines	.48	.23		
Friend suggests magazines	.50	.39	-.21	
Father suggests web sites	.57	.22	.30	
Mother suggests web sites	.48	.26	.23	
Friend suggests web sites	.46	.39		
Father encourages reading	.69			-.33
Mother encourages reading	.61			-.30
Friend encourages reading	.59		-.47	
Father reads books	.36			-.29
Mother reads books	.36			
Friend reads books	.40		-.25	
Father reads magazines/newspapers	.29		.24	
Mother reads magazines/newspapers	.35			
Friend reads magazines/newspapers	.44	.25	-.23	
Father reads web sites	.36	.22	.37	
Mother reads web sites	.36	.28	.26	
Friend reads web sites	.38	.39		

Note. Loadings $\leq .19$ suppressed for clarity.

Table 9, continued

Factor Loadings Obtained with Extraction of Four Factors Using PAF (Without Rotation)

Variable	Factor			
	1	2	3	4
Father happy about reading	.33	-.23		-.35
Mother happy about reading	.36	-.20		-.36
Friend happy about reading	.35		-.32	
Father talks about reading	.56			
Mother talks about reading	.54			
Friend talks about reading	.57		-.23	
Father reads aloud	.52	-.22		
Mother reads aloud	.51	-.28		
Friend reads aloud	.43		-.43	
Parents give books as presents	.52	-.39		.45
Father gives books as presents	.51	-.34		.31
Mother gives books as presents	.45	-.36		.43
Friend gives books as presents	.45		-.30	.27

Note. Loadings $\leq .19$ suppressed for clarity.

Table 10

Pattern Matrix Obtained with Extraction of Four Factors Using PAF and Direct Oblimin

Rotation

Variable	Factor			
	1	2	3	4
Father suggests books	.41			.22
Mother suggests books	.33			.20
Friend suggests books			-.61	
Father suggests magazines		.48		
Mother suggests magazines		.52		
Friend suggests magazines		.34	-.54	
Father suggests web sites		.58		
Mother suggests web sites		.54		
Friend suggests web sites		.48	-.32	
Father encourages reading	.66			
Mother encourages reading	.58			
Friend encourages reading			-.73	
Father reads books	.50			
Mother reads books	.34			
Friend reads books			-.43	
Father reads magazines/newspapers		.37		
Mother reads magazines/newspapers		.37		
Friend reads magazines/newspapers			-.48	
Father reads web sites		.54		
Mother reads web sites		.53		
Friend reads web sites		.49	-.22	

Note. Loadings $\leq .19$ suppressed. Bold text indicates factor assignments.

Table 11, continued

Pattern Matrix Obtained with Extraction of Four Factors Using PAF and Direct Oblimin

Rotation

Variable	Factor			
	1	2	3	4
Father happy about reading	.56			
Mother happy about reading	.57			
Friend happy about reading			-.48	
Father talks about reading	.34	.21		.23
Mother talks about reading	.30			.25
Friend talks about reading			-.48	
Father reads aloud	.38			.24
Mother reads aloud	.23			.41
Friend reads aloud			-.55	
Parents give books as presents				.80
Father gives books as presents				.64
Mother gives books as presents				.73
Friend gives books as presents			-.40	.43

Note. Loadings $\leq .19$ suppressed. Bold text indicates factor assignments.

Table 12

Structure Matrix Obtained with Extraction of Four Factors Using PAF and Direct Oblimin Rotation

Variable	Factor			
	1	2	3	4
Father suggests books	.58	.39	-.38	.45
Mother suggests books	.53	.42	-.41	.43
Friend suggests books	.30	.28	-.66	.24
Father suggests magazines	.21	.53	-.21	.31
Mother suggests magazines	.21	.57	-.28	.28
Friend suggests magazines		.46	-.60	
Father suggests web sites	.37	.65	-.26	.27
Mother suggests web sites	.27	.58	-.26	
Friend suggests web sites		.54	-.43	
Father encourages reading	.76	.36	-.41	.38
Mother encourages reading	.67	.32	-.40	.32
Friend encourages reading	.33	.25	-.76	.27
Father reads books	.50	.24		
Mother reads books	.40	.27		
Friend reads books	.25		-.47	
Father reads magazines/newspapers		.38		.20
Mother reads magazines/newspapers	.24	.41		
Friend reads magazines/newspapers		.33	-.53	
Father reads web sites	.28	.53		
Mother reads web sites		.53		
Friend reads web sites		.51	-.32	

Note. Loadings $\leq .19$ suppressed.

Table 12, continued

Structure Matrix Obtained with Extraction of Four Factors Using PAF and Direct

Oblimin Rotation

Variable	Factor			
	1	2	3	4
Father happy about reading	.52			
Mother happy about reading	.54			
Friend happy about reading			-.48	
Father talks about reading	.50	.39	-.26	.42
Mother talks about reading	.46	.35	-.28	.42
Friend talks about reading	.29	.36	-.59	.34
Father reads aloud	.51	.25	-.30	.41
Mother reads aloud	.41	.21	-.32	.53
Friend reads aloud	.24		-.56	.31
Parents give books as presents	.28	.26	-.22	.79
Father gives books as presents	.32	.24	-.25	.68
Mother gives books as presents	.23	.23		.72
Friend gives books as presents			-.48	.50

Note. Loadings $\leq .19$ suppressed.

Table 13

Factor Correlation Matrix Obtained with Extraction of Four Factors Using PAF and

Direct Oblimin Rotation

Factor	1	2	3	4
1	—			
2	.34	—		
3	-.30	-.32	—	
4	.36	.27	-.30	—

Table 14

Summary of Factor Solutions

Aspect of solution	6-factor solution*	5-factor solution*	4-factor solution	3-factor solution
Support for number of factors	PA Scree plot/objective scree	PA, when inaccurate, usually overestimates by 1 Only 2 loadings on last factor of 6-factor solution	Velicer's MAP (2000) Only 2 loadings on last factor of 5-factor solution	Velicer's MAP (1976) Scree plot/objective scree
Factor 1†	General and book-related support from parents (6 items)	General and book-related support from parents (8 items)	General and book-related support from parents (11 items)	General and book-related support from parents (15 items)
Factor 2‡	Magazine/newspaper suggestions from parents (2 items)	Web site-related support from all (6 items)	Mags./news.-related support from parents and web-site related support from all (9 items)	Mags./news.-related support from parents and web-site related support from all (9 items)

Note. * Solution after items without significant loadings removed. † Row includes number of items loading *singularly* on the factor; description of factor reflects

only these items. ‡ Includes one conceptually inconsistent item, *mother reads aloud*; this item also reduced scale reliability, and was ultimately eliminated.

Mags./news. = magazines and newspapers.

Table 14, continued

Summary of Factor Solutions

Aspect of solution	6-factor solution*	5-factor solution*	4-factor solution	3-factor solution
Factor 3†	General and item-specific support from friends (7 items)	General and item-specific support from friends (6 items)	General and item-specific support from friends (7 items)	General and item-specific support from friends (8 items)
Factor 4†	Books as presents from parents (3 items)	Books as presents from parents (4 items)‡	Books as presents from parents (4 items)‡	
Factor 5†	Web site-related support from parents (4 items)	Mags./news. suggestions from parents (2 items)		
Factor 6 †	Read aloud with parents (2 items)			

Note. * Solution after items without significant loadings removed. † Row includes number of items loading *singularly* on the factor; description of factor reflects only these items. ‡ Includes one conceptually inconsistent item, *mother reads aloud*; this item also reduced scale reliability, and was ultimately eliminated.

Mags./news. = magazines and newspapers.

Table 14, continued

Summary of Factor Solutions

Aspect of solution	6-factor solution*	5-factor solution*	4-factor solution	3-factor solution
Items with multiple loadings	Father suggests books (F1, F2)	Father suggests books (F1, F5)	Friend suggests mags./news.	Friend suggests mags./news.
	Mother suggests books (F1, F2)	Mother suggests books (F1, F5)	(F2, F3)	(F2, F3)
	Friend suggests mags./news. (F2, F3)	Friend suggests mags./news. (F3, F5)	Friend suggests web sites (F2, F3)	Friend suggests web sites (F2, F3)
	Friend suggests web sites (F3, F5)	Friend reads mags./news. (F3, F5)	Friend gives books (F3, F4)	
	Friend reads web sites (F5, F6)	Friend gives books (F3, F4)		
	Friend gives books (F3, F4)			
Items without any loadings $\geq .30$	Father reads mags./news.	Father reads mags./news.	None	None
	Mother reads mags./news.	Mother reads mags./news.		
	Father talks about reading	Mother talks about reading		
	Mother talks about reading			

Note. * Solution after items without significant loadings removed. † Row includes number of items loading *singularly* on the factor; description of factor reflects only these items. ‡ Includes one conceptually inconsistent item, *mother reads aloud*; this item also reduced scale reliability, and was ultimately eliminated.

Mags./news. = magazines and newspapers.

It is interesting and important to note, as indicated in Table 14, that across the four solutions, Factors 1 and 3 remained highly similar in content. In addition, Factor 4 was highly consistent across the three solutions that included at least four factors, suggesting that the selected solution should include it. Hence, the 3-factor solution was eliminated from consideration; while this solution was in a sense the most parsimonious solution, and did not differ in any other way from the 4-factor solution, it perhaps unduly folded the items of Factor 4 into Factors 1 and 3.

Table 14 also demonstrates that the 4-factor solution clearly satisfied the criteria discussed above better than either the 5- or 6-factor solutions. These solutions each had 3-4 items that did not load on any factors, and had 5-6 items with multiple loadings, which also meant that the number of items loading singularly on each factor were generally lower, and that the factors were less conceptually clear.

As noted above, Guadagnoli and Velicer (1988) developed guidelines for sample size requirements in factor analysis based on the magnitude of factor loadings. According to their guidelines, any factor is reliable, regardless of sample size, if it has either (a) three loadings above .80 or (b) four loadings above .60. In addition, factors with 10 or more low (.40) loadings are considered reliable if the sample is comprised of more than 150. The final four-factor solution does not quite meet these criteria. Specifically, factors 1 and 3 nearly satisfied criterion b, as Factor 1 included four loadings above .56, and factor 3 had four loadings above .54. Factor 4 fell short of meeting this criterion by having three loadings above .60, with its other two loadings being .43 and .41. Lastly, Factor 2 nearly met the criterion of 10 or more loadings of .40 or higher, having 8 items assigned to it with loadings above .40, and 2 items with loadings of .37. Given that this

solution satisfied the more traditional sample size guidelines for factor analysis and nearly satisfied these loading-based criteria, it seemed warranted to proceed with other analyses based on this solution.

Finalization of Four-factor Solution

To finalize the four-factor solution and develop scales that could be used in other analyses, decisions needed to be made regarding the three items with multiple loadings, reliability analyses needed to be conducted, and the factors needed to be given short descriptive names. Potentially, the items with multiple loadings could be deleted, placed on a certain factor for empirical reasons, or placed on a factor for conceptual reasons (Hair et al., 2006); the latter two options were employed. Because *friend suggests magazines* loaded more strongly on Factor 3 (-.54) than Factor 2 (.34), and because the other item concerning friends and magazines loaded singularly on Factor 3, it was placed on that factor as well. Similarly, because *friend suggests web sites* loaded somewhat more strongly on Factor 2 (.48) than Factor 3 (.32) and the other item concerning friends and web sites (*friend reads web sites*) loaded singularly on Factor 2, it was placed on Factor 2. Lastly, *friend gives books as presents*, which loaded at .43 on Factor 4, and -.40 on Factor 3, was placed on Factor 4. As these loadings were nearly identical, and conceptually an argument could be made for placing this item on either factor, this decision was based on the desirability of increasing the number of items on Factor 4.

Next, based on the 4-factor solution, four scales were created from children's responses to the RSS and their internal consistency reliability and other psychometric properties were examined. Cronbach's α values for all scales derived from the four factors were above the minimum desirable value of .70 (Garson, n.d.). Specifically, the

Factor 1 scale, comprised of 11 items, had a Cronbach's α value of .84, and would not be improved by the deletion of any items. The Factor 2 scale, comprised of 10 items, had a Cronbach's α value of .79, and likewise would not be improved by the deletion of any items. The Factor 3 scale, comprised of 8 items, had a Cronbach's α value of .81, and also would not be improved by the deletion of any items. The analysis for Factor 4 indicated that the Cronbach's α value of its scale improved slightly, from .78 to .79, when *mother reads aloud* was removed. Because this item did not mesh conceptually with the other four items of the scale, which all concerned receiving books as presents, it was eliminated. While additionally eliminating *friend gives books* would further increase α to .82, this item was retained because it was conceptually consistent with the other items of the scale. Thus, four scales with high internal consistency were created. Scores on these scales were generated by summing responses to the items comprising them. See Table 15 for a summary of this reliability analysis and Table 16 for descriptive statistics for each scale.

In Table 14 each factor is labeled based on the items that loaded singularly on it. Based, however, on the determination of the four-factor solution described above and the desire for simple labels to use when describing further analyses involving the factor-based scales, the factors/scales were renamed. Factor 1 and the scale based on it will henceforth be referred to as *parent general/book support* because it includes items concerning mothers' and fathers' encouragement of reading in general and books in particular. Factor 2 and its scale will be referred to as *other media support* because it includes items pertaining to the reading materials other than books that were under study (magazines/newspapers and web sites). It should be noted that it includes items

concerning parents' support of magazine/newspaper and web site reading and friends' support of web site reading, so a source of support cannot be included in its label. Factor 3 and its scale will be called *friend support*, as it only includes items concerning friends. This scale, it should be noted, includes friends' support for reading in general as well as reading books and magazines. Lastly, Factor 4 and its scale will be called *books as gifts*, because it incorporates only the four items concerning the frequency of receiving books as presents. Like other media support, books as gifts does not include a source of support in its label because it includes items relevant to all socialization agents under study.

Table 15

Scales Formed from the RSS

Factor	Scale name	No. Items	α	Item-total correlations (range)
1	Parent general/book support	11	.84	.39-.72
2	Other media support	10	.79	.35-.59
3	Friend support	8	.81	.45-.68
4	Books as gifts	4	.79	.42-.73

Table 16

Descriptive Statistics of Scales Formed from the RSS

Dimension	Full sample			Boys			Girls			4 th graders			5 th graders		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Parent general/ book support	270	27.26	7.79	124	26.85	7.86	146	27.61	7.73	116	27.68	7.44	154	26.94	8.05
Other media support	271	15.28	7.40	125	15.26	7.83	146	15.30	7.05	119	14.34	7.28	152	16.01	7.44
Friend support	259	13.11	6.21	114	11.66	6.51	145	14.25	5.73	115	12.96	6.32	144	13.23	6.14
Books as gifts	275	5.17	3.52	125	5.14	3.70	150	5.20	3.38	119	5.82	3.83	152	4.68	3.19

Note. Scores could range from 2-44 for parent general/book support, 0-40 for other media support, 1-32 for friend support, and 0-16 for books as gifts.

Summary and Modified Hypotheses

The results presented in this section provided only partial support for Hypothesis 1. Specifically, they indicated that students distinguished between their parents and friends as sources of support for their reading, but did not provide any evidence that mother support and father support for reading are different latent constructs. Furthermore, as discussed in Chapter 5, the analysis indicated that support for reading may also have underlying dimensions based on type of support.

Because Hypothesis 1 was not fully supported, it was necessary to modify some of the other study hypotheses. That is, in their original form, several of the six remaining hypotheses, as well as some aspects of the planned analyses, reflected an expectation that mother support and father support would emerge as separate dimensions in the factor analysis. The revised hypotheses are presented here, with explanations of how the hypotheses and analyses were modified.

Hypothesis 2: Children will perceive higher levels of reading support from their mothers than from their fathers or friends. This hypothesis was not changed. However, to allow mother and father support to be compared, analyses were conducted at the item level, rather than using factor-based scales as originally planned.

Hypothesis 3: Regarding levels of perceived reading support, reading motivation and frequency, (a) girls will perceive greater reading support and show a more positive profile of reading motivation and frequency than boys, and (b) fourth-graders will report higher reading support, reading motivation, and reading frequency than fifth-graders. This hypothesis also remained unmodified. The analysis was essentially unchanged. Reading support, however, was represented by a different set of constructs (i.e., those

represented by the four scales derived from factor analysis) than it would have been had Hypothesis 1 been fully supported.

Hypothesis 4: Perceived reading support will relate positively to the intrinsic reading motivation dimensions of autonomy and knowledge goals/interest, to competence beliefs in reading (the reading motivation dimension of efficacy/challenge) and to reading frequency. This hypothesis refers more generally to “perceived reading support” compared to the original hypothesis which referred to separate examination of “perceived mother, father, and friend support.” Each reading support dimension that emerged in the factor analysis was examined in relation to the motivation dimensions and reading frequency to test this revised hypothesis.

Hypothesis 5: Perceived reading support will relate negatively to the extrinsic reading motivation dimensions of competition and recognition. This hypothesis and its planned analyses were modified in the same ways as for Hypothesis 4.

Hypothesis 6: When perceived parent and friend support for reading are examined in combination with each other, (a) parent support will relate most strongly to children’s reading motivation and frequency, but (b) perceived friend support will also contribute significantly to reading motivation and frequency. The original hypothesis stated that mother, father, and friend support would be examined, but as mother and father support did not appear at all distinct from each other in the factor analysis, they were considered together as parent support. In analyses, parent support was represented by the parent general/book support scale and friend support by the friend support scale.

Hypothesis 7: When all dimensions of perceived reading support are employed as grouping variables in cluster analyses (a) children with distinct profiles of reading

support will be apparent and (b) these groups will differ significantly in their levels of reading motivation and frequency. Children that perceive high levels of each dimension will show the most positive profiles of reading motivation and frequency, and those that perceive mixed levels of support will show more positive profiles of reading motivation and frequency than those perceiving low levels of each dimension. The original hypothesis specifically predicted that there would be at least four clusters of students, based on the pilot study, in which mother, father, and best friend support were the grouping variables. The analysis employed a different set of grouping variables, participants' scores on the four scales derived from the factor analysis, so a prediction about the number of clusters was no longer warranted.

Hypothesis 2

This hypothesis, which predicted that children would perceive higher levels of reading support from their mothers than from their fathers or from their friends, was tested through a series of paired sample *t* tests. One series compared children's perceptions of their mothers and fathers, and one series compared their perceptions of their mothers and friends. Although the hypothesis did not address children's perceptions of their fathers in comparison to their perceptions of their friends, a series of analyses was also carried out to compare children's perceptions of reading support from these two socialization agents. The analyses thus built on the factor analysis finding that children did not distinguish their mothers and fathers as unique reading support sources, but did distinguish them from their friends. Paired sample comparisons of father and friend items would show whether children perceived similar types and degrees of differences between reading support from fathers versus friends as from mothers versus friends.

The general term “levels” is used here to refer both to the frequency of behaviors that represented reading support and the affect around reading reported by the participants. That is, this analysis examined the items on the RSS that inquired about the frequency of others’ behaviors, the one item that asked about those others’ reactions to the focal child’s reading, and the subparts of the three items that concerned participants’ enjoyment of reading. Because there were 11 x 3 items that concerned others’ frequency/affect (i.e., 11 items repeated for three socialization agents) and 3 x 3 items that concerned the participants’ affect around reading interactions (i.e., 3 items each repeated for each socialization agents), 42 comparisons were conducted. These comparisons were conducted for the whole sample, as well as separately for boys and girls, given the overall concern with possible gender differences in this study. To control for the increased probability of Type I error due to the large number of comparisons, only differences significant at $p \leq .001$ are reported.

As shown in Table 17, in the full sample analysis, participants rated their mothers significantly higher than their fathers on ten of the 14 items considered, and higher than their friends on nine of the items. On six items, they also rated their fathers higher than their friends. For only one item, *reads books*, were friends rated higher than fathers, and on no items were friends rated higher than mothers, or were fathers rated higher than mothers.

As also indicated in Table 17, the separate analyses by gender, however, showed that a number of the differences held only for one gender. Specifically, only girls reported that their friends read books more frequently than their fathers and that their mothers read web sites more frequently than their friends. In addition, it was only girls who enjoyed

talking about reading with, reading aloud with, and receiving books from their mothers more than with regard to their fathers. On the other hand, only boys talked about reading more frequently with their fathers than with their friends and enjoyed talking about reading more with their mothers than with their friends. Lastly, for one item there were significant differences for boys, but not for girls or the full sample: boys reported that both their mothers and fathers suggested magazines and newspapers more frequently than their friends.

Overall, then, the paired sample t tests provided support for Hypothesis 2 by revealing that in many regards, children perceived greater levels of reading support from their mothers than from their fathers or their friends. Only on one of 14 items (*suggests web sites*) was there no evidence for this hypothesis. In addition, it is relevant here to consider children's responses to the final item on the RSS, which asked whether or not others lead them to read in their free time. Of the 284 children who responded to this item, 78.5% answered yes. As shown in Table 18, 39.9% who responded positively selected their mother as the person who leads them to read the most, whereas 13.0% selected their father and 12.1% selected either the friend they had in mind as they did the RSS or another friend. A Chi square test indicated no association between children's gender and the selection of their greatest influence.

Table 17

Summary of Paired Sample Comparisons of Children's Perceptions of their Mothers, Fathers, and Friends

Item	Full sample differences (<i>t</i> , <i>df</i>)	Analysis by gender (<i>t</i> , <i>df</i>)*
S.A. suggests books	Mo > Fa (-11.50, 277)	
	Mo > Fr (14.68, 277)	
	Fa > Fr (6.67, 275)	
S.A. suggests magazines/newspapers	None	Mo > Fr for boys (3.53, 126)
		Fa > Fr for boys (3.45, 126)
S.A. suggests web sites	None	
S.A. encourages reading	Mo > Fa (-8.47, 277)	
	Mo > Fr (21.93, 278)	
	Fa > Fr (14.03, 277)	
S.A. reads books	Mo > Fa (-8.59, 277)	Fr > Fa only for girls (-6.54, 149)
	Fr > Fa (-5.31, 274)	
S.A. reads magazines/newspapers	Mo > Fr (7.91, 278)	
	Fa > Fr (7.58, 270)	
S.A. reads web sites	Mo > Fr (4.96, 273)	Mo > Fr only for girls (4.69, 147)
S.A. happy about reading	Mo > Fa (-6.10, 278)	
	Mo > Fr (18.01, 269)	
	Fa > Fr (13.66, 269)	
S.A. talks about reading	Mo > Fa (-9.26, 277)	Fa > Fr only for boys (3.97, 125)
	Mo > Fr (10.60, 277)	
	Fa > Fr (4.48, 278)	

Note. * T-tests were significant for each gender, analyzed separately, at the same level as for the full sample, except as noted in this column. S.A. = socialization agent. Mo = mother. Fa = father. Fr = friend.

Table 17, continued

Summary of Paired Sample Comparisons of Children's Perceptions of their Mothers, Fathers, and Friends

Item	Full sample results (<i>t</i> , <i>df</i>)	Analysis by gender (<i>t</i> , <i>df</i>)*
S.A. reads aloud	Mo > Fa (-8.62, 276)	
	Mo > Fr (8.17, 275)	
S.A. gives books as presents	Mo > Fa (-9.49, 275)	
	Mo > Fr (15.57, 275)	
	Fa > Fr (8.34, 277)	
Child enjoys talking about reading with S.A.	Mo > Fa (-5.14, 243)	Mo > Fa only for girls (-5.05, 130)
	Mo > Fr (4.41, 203)	Mo > Fr only for boys (3.64, 84)
Child enjoys reading aloud with S.A.	Mo > Fa (-4.27, 144)	Mo > Fa only for girls (-3.75, 81)
Child enjoys receiving books from S.A.	Mo > Fa (-4.60, 185)	Mo > Fa only for girls (-3.61, 102)

Note: * T-tests were significant for each gender analyzed separately, at the same level as for the full sample, except as noted in this column. S.A. = socialization agent. Mo = mother. Fa = father. Fr = friend.

Table 18

Response Frequencies to RSS Item Concerning Most Positive Influence on Reading

Habits

Person who leads child to read the most	Percentage
Mother	39.9
One of the child's teachers	16.6
Father	13.0
Friend	12.1
<i>Friend in mind for RSS</i>	8.5
<i>Another friend</i>	3.6
Sister	2.3
Brother	2.0
Someone else	5.4
Multiple people*	7.2
<i>Mother and father</i>	4.5
<i>Mother and someone besides father</i>	2.7

*Although instructed to select one person, some children selected multiple people.

Hypothesis 3

The third hypothesis stated that girls would perceive greater reading support and show a more positive profile of reading motivation and frequency in comparison to boys, and that such a pattern of differences would also be the case for fourth-graders versus fifth-graders. To test this hypothesis, two-way ANOVAs were conducted to detect main effects for gender and grade level as well as interactions between these factors. Multiple ANOVAs were employed rather than a MANOVA because the intention of this analysis was to determine in which particular dependent variables there were differences related to gender and grade level, not whether there were gender and grade level differences in a linear composite of the dependent variables (Dimitrov & Rumrill, 2005).

Four sets of dependent variables were examined in the ANOVAs: (1) reading support dimensions; (2) RSS affect items (these were examined as individual variables because of the widely varying n 's for each item; see Table 4); (3) reading motivation dimensions; and (4) recreational reading frequency. Analyses were conducted using both the standard .05 alpha level and alpha corrected for familywise error. Specifically, the rather conservative Bonferroni adjustment was made to the standard .05 alpha for each of the four sets of analyses. As explained by Jaccard and Guilamo-Ramos (2002), presenting the results both with and without the corrected alpha level addresses the concern that making multiple comparisons increases the probability of Type I error, while reducing alpha increases the probability of Type II error. If the results with and without the adjusted alpha levels conflict, it suggests that caution is especially warranted when drawing conclusions from the analyses. Here, results are presented for each set of

analyses with regard to the standard level of alpha, and with regard to the Bonferroni-adjusted alpha when this adjustment changes the evaluation of statistical significance.

First, with regard to the dimensions of reading support, girls ($M = 14.25$, $SD = 5.73$) perceived greater friend support than boys ($M = 11.66$, $SD = 6.51$), $F(1, 255) = 10.74$, $p \leq .001$, partial $\eta^2 = .04$. Also, fourth-graders ($M = 5.82$, $SD = 3.83$) reported receiving more books as presents than fifth-graders ($M = 4.68$, $SD = 3.19$), $F(1, 271) = 7.57$, $p \leq .01$, partial $\eta^2 = .03$. There were no gender or grade level differences for parent general/book support or other media support, and no interactions between gender or grade level for any reading support dimensions.

The next set of ANOVAs revealed that girls reported greater enjoyment of reading interactions than boys in four respects. Specifically, girls, more than boys, enjoyed talking about reading with their mothers (Girls $M = 3.49$, $SD = .65$; Boys $M = 3.21$, $SD = .76$), $F(1, 261) = 9.41$, $p \leq .01$, partial $\eta^2 = .04$, and with their friends (Girls $M = 3.28$, $SD = .73$; Boys $M = 3.00$, $SD = .87$), $F(1, 204) = 5.89$, $p \leq .05$, partial $\eta^2 = .03$. Also, girls more greatly enjoyed receiving books from their mothers (Girls $M = 3.75$, $SD = .47$; Boys $M = 3.60$, $SD = .56$), $F(1, 233) = 5.09$, $p \leq .05$, partial $\eta^2 = .02$, and with marginal significance enjoyed reading aloud with their mothers more than boys (Girls $M = 3.47$, $SD = .69$; Boys $M = 3.24$, $SD = .79$), $F(1, 198) = 3.81$, $p = .052$, partial $\eta^2 = .02$. However, application of the Bonferroni-adjusted alpha level of .005 (.05/10 since there are 10 affect items) would mean that the gender differences for enjoying talking about reading with friends, receiving books from their mothers, and reading aloud with their mothers would not be considered significant.

This second set of ANOVAs also showed that in comparison to fifth-graders, fourth-graders perceived greater enjoyment in one regard: they more so enjoyed reading aloud with their friends, (4th grade $M = 3.36$, $SD = .81$; 5th grade $M = 3.20$, $SD = .74$), $F(1, 128) = 4.30$, $p \leq .05$, partial $\eta^2 = .03$. But this effect would not be significant using the Bonferonni-adjusted alpha of .005. There was, however, a significant interaction for this item, with and without the Bonferonni-adjusted alpha, $F(1, 128) = 8.51$, $p \leq .01$, partial $\eta^2 = .06$. Fourth-grade boys ($M = 3.71$, $SD = .47$) reported higher enjoyment of reading aloud with their friends than all other groups, with fifth-grade boys reporting the least enjoyment ($M = 3.00$, $SD = .77$), followed by fourth-grade girls ($M = 3.19$, $SD = .89$) and fifth-grade girls ($M = 3.31$, $SD = .71$). There were no other significant interactions or main effects related to grade level for the set of ten affect items. In considering all analyses involving the affect items, it is important to keep in mind that students only responded to these items if they responded more frequently than *Never* to the corresponding frequency items; therefore, the differences reported here do not represent the full sample.

In terms of reading motivation, girls were significantly higher than boys on the dimensions of autonomy (Girls $M = 13.42$, $SD = 2.27$; Boys $M = 12.32$, $SD = 2.65$), $F(1, 287) = 12.72$, $p \leq .001$, partial $\eta^2 = .04$, and recognition (Girls $M = 16.43$, $SD = 2.86$; Boys $M = 15.33$, $SD = 3.40$), $F(1, 286) = 7.09$, $p \leq .01$, partial $\eta^2 = .02$. Fourth-graders ($M = 16.43$, $SD = 3.08$) were also higher than fifth-graders in recognition ($M = 15.54$, $SD = 3.18$), $F(1, 286) = 5.38$, $p \leq .05$, partial $\eta^2 = .02$, as well as in competition (4th grade $M = 11.69$, $SD = 3.37$; 5th grade $M = 10.40$, $SD = 3.57$), $F(1, 283) = 9.42$, $p \leq .01$, partial $\eta^2 = .03$. There were no gender or grade level differences for efficacy/challenge or

knowledge goals/interest, and no significant interactions for any of the motivation variables. With Bonferroni-adjusted alpha levels of .01 (.05/5, since there are five motivation variables), the grade-level difference for recognition would not be deemed significant.

Lastly, in the set of analyses concerning recreational reading habits, girls ($M = 3.08$, $SD = .83$) reported more frequent story book reading than boys ($M = 2.70$, $SD = .97$), $F(1, 279) = 11.35$, $p \leq .001$, partial $\eta^2 = .04$. Also, fourth-graders ($M = 2.29$, $SD = .99$) reported reading information books more often than fifth-graders ($M = 2.07$, $SD = .88$), $F(1, 279) = 4.22$, $p \leq .05$, partial $\eta^2 = .04$, whereas fifth-graders ($M = 2.19$, $SD = 1.19$) reported reading magazines and newspapers more frequently than fourth-graders ($M = 1.81$, $SD = 1.11$), $F(1, 279) = 6.78$, $p \leq .01$, partial $\eta^2 = .02$. There were no gender or grade level differences in web site reading, and no interactions between gender and grade level for any of the reading frequency variables. The grade-level difference for reading information books would not be significant using the Bonferroni-adjusted alpha of .0125 (.05/4, since there are four reading frequency variables).

On the whole, these ANOVAs showed that girls had a somewhat more positive profile of reading motivation, reading frequency, and reading support, including affect around reading interactions (particularly those involving their mothers) than boys. The ANOVAs indicated that fourth- and fifth-graders also differed in a few regards. These results should be interpreted cautiously, however, given the somewhat conflicting sets of significant results obtained with and without using alpha levels corrected for familywise error.

Hypotheses 4 and 5

Hypothesis 4 predicted that perceived reading support would relate positively to the intrinsic reading motivation dimensions of autonomy and knowledge goals/interest, to competence beliefs in reading (the reading motivation dimension of efficacy/challenge) and to reading frequency. In contrast, Hypothesis 5 predicted that perceived reading support would relate negatively to the extrinsic reading motivation dimensions of competition and recognition.

First, to assess these hypotheses, zero-order correlations with pairwise exclusion were calculated among the four perceived support dimensions, the five motivation dimensions, and the four reading frequency variables. The results of these analyses are summarized in Table 19, while the complete correlation matrix is presented in Appendix G.

Relevant to Hypothesis 4, each perceived reading support dimension correlated significantly and positively with autonomy, efficacy/challenge, knowledge goals/interest, and the four reading frequency variables with the exceptions that other media support did not correlate with autonomy and neither other media support nor books as presents correlated with story book reading. The correlations of parent general/book support and friend support with the motivation variables were generally moderate in magnitude, while the correlations of other media support and books as presents with the motivations were generally weak. The correlations of the reading support variables with the reading frequency variables were also generally weak, with the exception that other media support correlated .43 ($p \leq .001$) with web site reading.

For Hypothesis 5, in contrast to prediction, none of the dimensions of perceived reading support correlated significantly with competition. Moreover, each dimension correlated significantly and positively with recognition at a weak to moderate magnitude.

Partial correlations among the reading support, motivation, and frequency variables were also calculated, with the three reading achievement variables available (WJ III Fluency, DIBELS ORF, and reading grades) used alternately as controls. These partial correlations were of interest given that much research indicates that reading achievement and motivation are positively related (e.g., Cunningham & Stanovich, 1997; Guthrie et al., 1999) and some research has shown that reading achievement is related to parent support of older children's reading (e.g., Greaney & Hegarty, 1987; Hansen, 1969). If a partial correlation approached zero, it would mean that the corresponding zero-order correlation was spurious, not the result of a direct causal link between variables, and if it was higher than the zero-order correlation, it would be evidence of reading achievement suppressing relations between reading support and motivation (Garson, n.d.). As in the pilot study, the partial correlations differed very little from the zero-order correlations, as shown in Table 19; they were sometimes slightly lower and sometimes slightly higher. Generally, using reading grades as the control affected the correlations the most. Even so, the greatest difference between the zero-order and partial correlations was a reduction of the correlation between parent general/book support and efficacy/challenge from .32 to .25.

Lastly, zero-order correlations were calculated separately for girls and boys and tested for significant differences according to the formula for comparing correlation coefficients of independent samples provided by Garson (n.d.). No differences were

significant, although as mentioned in the discussion of sample size in Chapter 2, the power of this analysis was limited by the number of participants; with the number of boys and girls in the sample, this analysis was able to detect medium effects with power ranging from approximately .55 to .60 (Rosenthal & Rosnow, 1991).

Table 19

Correlations of Perceived Reading Support with Reading Motivation and Frequency

Variable	Parent general/ book support	Other media support	Friend support	Books as presents
Autonomy	.28***	.08	.21***	.14*
WJ III Fluency	.27***	.06	.20**	.16*
DIBELS ORF	.29***	.08	.22***	.18**
Reading grade	.23*	.06	.16	.13
Efficacy/challenge	.32***	.15*	.28***	.16*
WJ III Fluency	.32***	.14*	.28***	.20***
DIBELS ORF	.35***	.18**	.32***	.25***
Reading grade	.25*	.14	.22*	.16
Knowledge goals/ interest	.42***	.27***	.37***	.20***
WJ III Fluency	.42***	.27***	.37***	.21***
DIBELS ORF	.42***	.27***	.37***	.22***
Reading grade	.41***	.27*	.36***	.20
Competition	.03	.04	-.01	.05
WJ III Fluency	.03	.04	-.01	.05
DIBELS ORF	.03	.04	-.01	.06
Reading grade	-.03	.02	-.07	.04
Recognition	.40***	.24***	.31***	.23***
WJ III Fluency	.40***	.23***	.31***	.26***
DIBELS ORF	.41***	.24***	.32***	.27***
Reading grade	.36***	.23*	.27*	.24*

Note. The top line within each row contains zero-order correlations; the next three lines, partial correlations using WJ III Fluency, DIBELS Oral Reading Fluency, and second marking period reading grades as controls. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Table 19, continued

Correlations of Perceived Reading Support with Reading Motivation and Frequency

Variable	Parent general/ book support	Other media support	Friend support	Books as presents
Information book reading	.23***	.13*	.29***	.18**
WJ III Fluency	.24***	.14**	.30***	.18**
DIBELS ORF	.23***	.13*	.29***	.17**
Reading grade	.25*	.13	.31**	.18
Story book reading	.19**	.06	.18**	.09
WJ III Fluency	.18*	.04	.17**	.11
DIBELS ORF	.19**	.06	.19**	.12
Reading grade	.14	.04	.13	.09
Magazine/newspaper reading	.23***	.30***	.21***	.19**
WJ III Fluency	.24***	.30***	.21***	.19**
DIBELS ORF	.23***	.30***	.21***	.19**
Reading grade	.27*	.31**	.24*	.20
Web site reading	.12*	.43***	.15*	.16**
WJ III Fluency	.12	.43***	.15*	.16**
DIBELS ORF	.12*	.43***	.15*	.16**
Reading grade	.12	.43***	.15	.16

Note. The top line within each row contains zero-order correlations; the next three lines, partial correlations using WJ III Fluency, DIBELS Oral Reading Fluency, and second marking period reading grades as controls. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Hypothesis 6

Overview

The sixth hypothesis predicted that when parent support and friend support are examined in combination with each other, both would contribute significantly to children's reading motivation and frequency, although parent support would relate more strongly to them. A series of multiple hierarchical regressions were conducted to test this hypothesis. The dependent variables in these analyses were the four reading motivations that correlated significantly with perceived reading support (autonomy, efficacy/challenge, knowledge goals/interest, and recognition) and the four reading frequency items, which all correlated significantly with perceived reading support.

In each analysis, five independent variables were entered in separate blocks as follows: Block 1, WJ III Fluency; Block 2, grade level; Block 3, gender; Block 4, parent general/book support; Block 5, friend support. WJ III Fluency was used rather than DIBELS ORF because it measures fluency at a more complex level, i.e., at the level of syntactic units rather than individual words; plus, it was administered under known conditions, by one individual, while the DIBELS was administered by multiple people under likely more varying conditions. WJ III Fluency and the variables in blocks 2 and 3 were considered controls, and therefore entered ahead of the reading support variables. Friend support was entered after parent general/book support because research in other domains (see Chapters 1 and 2) has generally shown that parent variables relate more closely to motivation variables than peer or friend variables. Thus, in the present study I predicted that parent support would relate more strongly to the dependent variables and was interested in whether friend support would explain variance above and beyond parent

general/book support (although, it should be noted, the zero-order correlations of these two support variables with the dependent variables were quite similar in magnitude).

In addition, two interaction terms were created, Gender x Parent General/Book Support, and Gender x Friend Support, and entered, respectively, as Blocks 6 and 7. These interaction terms were included given the overall interest in this study in the role that gender possibly plays in the relationship between perceived reading support and reading motivation and frequency. In preparation for conducting the regressions with these interactions terms, the two categorical variables in the model, gender and grade level, were dummy-coded and all other variables in the models were standardized so that their means were 0 and standard deviations were 1. Gender was coded such that 0 represented males and 1 represented females, while grade level was coded such that 0 represented fourth-graders and 1 represented fifth-graders. To construct the interaction terms, the codes for gender were multiplied by the parent general/book support and friend support scale scores. These steps were taken in line with guidelines provided by Frazier, Tix, & Barron (2004) for investigating moderator effects in psychological research. As discussed further below, such steps facilitate the interpretation of any significant interaction effects.

The results of the regression analyses are discussed below, first in terms of the relative contributions of parent general/book support and friend support to reading motivation, and then in terms of these variables' contributions to recreational reading frequency. Before further discussion, however, it is important to point out that the interaction terms were not significant in any of the models predicting reading motivation and in only one of the four models predicting reading frequency, specifically, the model

predicting magazine/newspaper reading. Because there was not a strong theoretical basis for expecting significant interactions, the presented models, except for the one predicting magazine/newspaper reading, do not include interaction terms (Aiken & West, 1991).

Prediction of Reading Motivation

As shown in Table 20, after accounting for the contributions of WJ III Fluency, grade level, and gender, parent general/book support significantly added to the prediction of each reading motivation under study, with $p \leq .001$. Specifically, its contributed variance ranged from .06 for autonomy to .17 for knowledge goals/interest. Furthermore, in each full model, the β s associated with parent general/book support were greater in magnitude than those of all other variables in each model, except for the model predicting efficacy/challenge. For efficacy/challenge WJ III Fluency was by far the strongest predictor, followed by parent general/book support.

Friend support, when added last in each model, significantly added to the prediction of variance in efficacy/challenge, $\Delta R^2 = .02, p \leq .05$, and knowledge goals/interest, $\Delta R^2 = .04, p \leq .05$, but not in autonomy or recognition. Notably, in the models for efficacy/challenge and knowledge goals/interest, the β s for friend support were smaller than those for parent general/book support, respectively by .05 and .07. However, in the model predicting knowledge goals/interest, the friend support β was greater than the β s associated with WJ III fluency, grade level, and gender, and in the model predicting efficacy/challenge it was greater than those for grade level and gender

Table 20

Summary of Hierarchical Regressions Predicting Reading Motivations (5-Block Models)

Dependent variable: autonomy										
Model	Independent variables	Final β s					Summary Statistics			
		WJ	GL	GR	PS	FS	R ²	ΔR^2	ΔF	dfs
1	WJ	.24***	—	—	—	—	.06	—	15.27***	1, 246
2	WJ + GL	.24***	-.10	—	—	—	.07	.01	2.36	1, 245
3	WJ + GL + GR	.22***	-.08	.19**	—	—	.10	.04	10.09**	1, 244
4	WJ + GL + GR + PS	.21***	-.07	.18**	.25***	—	.17	.06	18.63***	1, 243
5	WJ + GL + GR + PS + FS	.21***	-.07	.18**	.24***	.04	.17	.00	.27	1, 242

Dependent variable: efficacy/challenge										
Model	Independent variables	Final β s					Summary Statistics			
		WJ	GL	GR	PS	FS	R ²	ΔR^2	ΔF	dfs
1	WJ	.43***	—	—	—	—	.18	—	54.76***	1, 245
2	WJ + GL	.43***	-.07	—	—	—	.19	.01	1.36	1, 244
3	WJ + GL + GR	.43***	-.07	-.02	—	—	.19	.00	.18	1, 243
4	WJ + GL + GR + PS	.41***	-.06	-.04	.29***	—	.27	.08	27.58***	1, 242
5	WJ + GL + GR + PS + FS	.41***	-.07	-.07	.21***	.16*	.29	.02	5.92*	1, 241

Note. WJ = WJ III Fluency. GL = grade level. GR = gender. PS = parent general/book support. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Table 20, continued

Summary of Hierarchical Regressions Predicting Reading Motivations (5-Block Models)

Dependent variable: knowledge goals/interest										
Model	Independent variables	Final β s					Summary Statistics			
		WJ	GL	GR	PS	FS	R ²	ΔR^2	ΔF	dfs
1	WJ	.09	—	—	—	—	.01	—	2.05	1, 244
2	WJ + GL	.09	-.10	—	—	—	.02	.01	2.37	1, 243
3	WJ + GL + GR	.09	-.10	-.02	—	—	.02	.00	.09	1, 242
4	WJ + GL + GR + PS	.07	-.08	-.04	.41***	—	.19	.17	50.10***	1, 241
5	WJ + GL + GR + PS + FS	.06	-.09	-.08	.30***	.23***	.23	.04	11.81***	1, 240

Dependent variable: recognition										
Model	Independent variables	Final β s					Summary Statistics			
		WJ	GL	GR	PS	FS	R ²	ΔR^2	ΔF	dfs
1	WJ	.25***	—	—	—	—	.06	—	16.48***	1, 246
2	WJ + GL	.25***	-.14*	—	—	—	.08	.02	5.21*	1, 245
3	WJ + GL + GR	.24***	-.13*	.14*	—	—	.10	.02	5.40*	1, 244
4	WJ + GL + GR + PS	.22***	-.11*	.13*	.38***	—	.24	.14	45.45***	1, 243
5	WJ + GL + GR + PS + FS	.21***	-.12*	.11	.32***	.12	.25	.01	3.13	1, 242

Note. WJ = WJ III Fluency. GL = grade level. GR = gender. PS = parent general/book support. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Prediction of Reading Frequency

Turning to the prediction of reading frequency, as shown in Table 21, parent general/book support added significantly beyond WJ III Fluency, grade level, and gender to the variance explained in information book reading, $\Delta R^2 = .05, p \leq .001$, and story book reading, $\Delta R^2 = .03, p \leq .01$; however, the parent general/book support β s were not significant in the final models that included friend support. Parent general/book support did not add significantly to the prediction of variance in web site reading, the dependent variable for which the least amount of variance was explained overall (see Table 21). On the other hand, friend support contributed significantly beyond the four variables already in the model to the prediction of variance in web site reading, $\Delta R^2 = .02, p \leq .05$, and was the only significant predictor in the full model for this dependent variable, $\beta = .16, p \leq .05$. Friend support also added significantly to the prediction of variance in information book reading, $\Delta R^2 = .05, p \leq .001$, and was the strongest predictor in this variable's final model, $\beta = .16, p \leq .05$, in which the only other positive predictor was being in fourth-grade. Friend support, however, did not significantly predict story book reading.

Table 21

Summary of Hierarchical Regressions Predicting Information, Story Book, and Web Site Reading Frequency (5-Block Models)

Dependent variable: information book reading										
Model	Independent variables	Final β s					Summary Statistics			
		WJ	GL	GR	PS	FS	R ²	ΔR^2	ΔF	dfs
1	WJ	-.08	—	—	—	—	.01	—	1.76	1, 246
2	WJ + GL	-.08	-.11	—	—	—	.02	.01	3.27	1, 245
3	WJ + GL + GR	-.08	-.12	-.05	—	—	.02	.00	.68	1, 244
4	WJ + GL + GR + PS	-.09	-.11	-.06	.23***	—	.08	.05	14.32***	1, 243
5	WJ + GL + GR + PS + FS	-.10	-.12*	-.11	.10	.28***	.13	.05	14.91***	1, 242

Dependent variable: story book reading										
Model	Independent variables	Final β s					Summary Statistics			
		WJ	GL	GR	PS	FS	R ²	ΔR^2	ΔF	dfs
1	WJ	.20***	—	—	—	—	.04	—	10.39***	1, 246
2	WJ + GL	.20***	-.12	—	—	—	.05	.01	3.41	1, 245
3	WJ + GL + GR	.19**	-.10	.18**	—	—	.09	.03	8.95**	1, 244
4	WJ + GL + GR + PS	.18**	-.09	.18**	.17**	—	.12	.03	7.67**	1, 243
5	WJ + GL + GR + PS + FS	.17**	-.10	.17**	.13	.07	.12	.00	.94	1, 242

Note. WJ = WJ III Fluency. GL = grade level. GR = gender. PS = parent general/book support. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Table 21, continued

Summary of Hierarchical Regressions Predicting Information, Story Book, and Web Site Reading Frequency (5-Block Models)

		Dependent variable: web site reading								
Model	Independent variables	Final β s					Summary Statistics			
		WJ	GL	GR	PS	FS	R ²	ΔR^2	ΔF	dfs
1	WJ	.05	—	—	—	—	.00	—	.52	1, 246
2	WJ + GL	.05	-.05	—	—	—	.00	.00	.54	1, 245
3	WJ + GL + GR	.05	-.05	-.09	—	—	.01	.01	2.11	1, 244
4	WJ + GL + GR + PS	.05	-.05	-.13	.04	—	.03	.01	3.52	1, 243
5	WJ + GL + GR + PS + FS	.04	-.06	-.13	.02	.16*	.04	.02	4.41*	1, 242

Note. WJ = WJ III Fluency. GL = grade level. GR = gender. PS = parent general/book support. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Finally, as shown in Table 22, the regression of magazine/newspaper reading was complicated by significant interactions between gender and parent general/book support as well as gender and friend support. To fully investigate this interaction, a second regression for magazine/newspaper reading was run, the only change being that the dummy-codes for males and females were reversed, so that 0 represented females and 1 represented males. This was done because the regression coefficients for variables in models with interaction terms represent conditional effects of those variables, or the effects of those variables when all variables in the model are set to 0 (Frazier et al., 2004; West, Aiken, & Krull, 1996). In other words, the 7-block model in which males were coded 0 represented the situation for males, while the 7-block model in which females were coded 0 represented the situation for females (the regression coefficients in models without interaction terms are the same regardless of how variables are dummy coded). Furthermore, the fact that regression coefficients in models with interaction terms represent conditional effects explains why it was helpful to dummy code or standardize all variables initially; doing so created meaningful 0 values for all variables, thus ensuring that any models with significant interaction terms could be interpreted relatively easily.

Thus, while the 5-block model suggests that parent general/book support was a significant predictor of magazine/newspaper reading, $\beta = .18, p \leq .05$, and that friend support was not, the 7-block models indicate that this was the case for males, $\beta = .37, p \leq .01$, but not for females; in fact, for females, friend support significantly predicted magazine/newspaper reading, $\beta = .34, p \leq .001$, while parent general/book support did not. These interactions are depicted graphically in Figure 2. This figure was created by

calculating scores for magazine/newspaper reading for girls and boys who scored 1 SD below the mean on both perceived reading support variables, 1 SD above the mean on both variables, 1 SD below on parent general/book support and 1 SD above on friend support, and 1 SD above on parent general/book support and 1 SD below on friend support. In these calculations, all other continuous variables were held at their mean (0) and the average value of .57 was used for grade level. Unstandardized (B) coefficients were used in the calculations rather than standardized (β) coefficients for, as explained by Frazier et al. (2004) and Aiken and West (1991), β coefficients for interaction terms are not properly standardized. Therefore, unstandardized coefficients are presented in Table 22 for the interaction terms.

In interpreting the models for magazine/newspaper reading, as well as the other reading frequency variables, it should be noted that the total amount of variance explained was less than that explained in any of the motivation variables. Specifically, the total variance explained in the frequency variables ranged from .04 (.03 adjusted) for web site reading to .13 (.11 adjusted) for both information book reading and magazine/newspaper reading. In contrast, the total variance accounted for in the motivation variables ranged from .17 (.15 adjusted) for autonomy to .29 (.27 adjusted) for efficacy/challenge.

Table 22

Summary of Hierarchical Regressions Predicting Magazine/Newspaper Reading

5-block model												
Model	Independent variables	Final β s							Summary Statistics			
		WJ	GL	GR	PS	FS	GRxPS	GRxFS	R ²	ΔR^2	ΔF	dfs
1	WJ	-.05	—	—	—	—	—	—	.00	—	.54	1, 246
2	WJ + GL	-.05	.16*	—	—	—	—	—	.03	.03	6.59*	1, 245
3	WJ + GL + GR	-.05	.16*	-.05	—	—	—	—	.03	.00	.57	1, 244
4	WJ + GL + GR + PS	-.06	.17**	-.06	.25***	—	—	—	.09	.06	16.41***	1, 243
5	WJ + GL + GR + PS + FS	-.06	.16**	.08†	.21*	.16	—	—	.11	.01	3.43	1, 242
7-block model (M = 0, F = 1)												
Model	Independent variables	Final β s or Bs‡							Summary Statistics			
		WJ	GL	GR	PS	FS	GRxPS	GRxFS	R ²	ΔR^2	ΔF	dfs
1	WJ	-.05	—	—	—	—	—	—	.00	—	.54	1, 246
2	WJ + GL	-.05	.16*	—	—	—	—	—	.03	.03	6.59*	1, 245
3	WJ + GL + GR	-.05	.16*	-.05	—	—	—	—	.03	.00	.57	1, 244
4	WJ + GL + GR + PS	-.06	.17**	-.06	.25***	—	—	—	.09	.06	16.41***	1, 243
5	WJ + GL + GR + PS + FS	-.06	.16**	.08†	.21*	.16	—	—	.11	.01	3.43	1, 242
6	WJ + GL + GR + PS + FS + (GR x PS)	-.05	.16**	-.08	.27**	.13	-.19	—	.11	.01	1.57	1, 241
7	WJ + GL + GR + PS + FS + (GR x PS) + (GR x FS)	-.06	.15*	-.08	.37**	-.06	-.41*	.45*	.13	.02	6.63*	1, 240

Note. WJ = WJ III Fluency. GL = grade level. GR = gender. PS = parent general/book support. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$. † Sign of coefficient

dependent on code used for gender. ‡ For interaction terms, B values are presented; for all other independent variables, β values are presented.

Table 22, continued

Summary of Hierarchical Regressions Predicting Magazine/Newspaper Reading

7-block model (F = 0, M = 1)												
Model	Independent variables	Final β s or Bs \ddagger							Summary Statistics			
		WJ	GL	GR	PS	FS	GRxPS	GRxFS	R ²	ΔR^2	ΔF	dfs
1	WJ	-.05	—	—	—	—	—	—	.00	—	.54	1, 246
2	WJ + GL	-.05	.16*	—	—	—	—	—	.03	.03*	6.59*	1, 245
3	WJ + GL + GR	-.04	.16*	.05	—	—	—	—	.03	.00	.57	1, 244
4	WJ + GL + GR + PS	-.06	.17**	.06	.25***	—	—	—	.09	.06	16.41***	1, 243
5	WJ + GL + GR + PS + FS	-.06	.16**	.08	.18*	.13	—	—	.11	.01	3.43	1, 242
6	WJ + GL + GR + PS + FS + (GR x PS)	-.05	.16**	.08	.11	.13	.18	—	.11	.01	1.42	1, 241
7	WJ + GL + GR + PS + FS + (GR x PS) + (GR x FS)	-.06	.15*	-.08	.01	.34***	.43*	-.49**	.14	.03	7.91**	1, 240

Note. WJ = WJ III Fluency. GL = grade level. GR = gender. PS = parent general/book support. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$. † Sign of coefficient

dependent on code used for gender. ‡ For interaction terms, B values are presented; for all other independent variables, β values are presented.

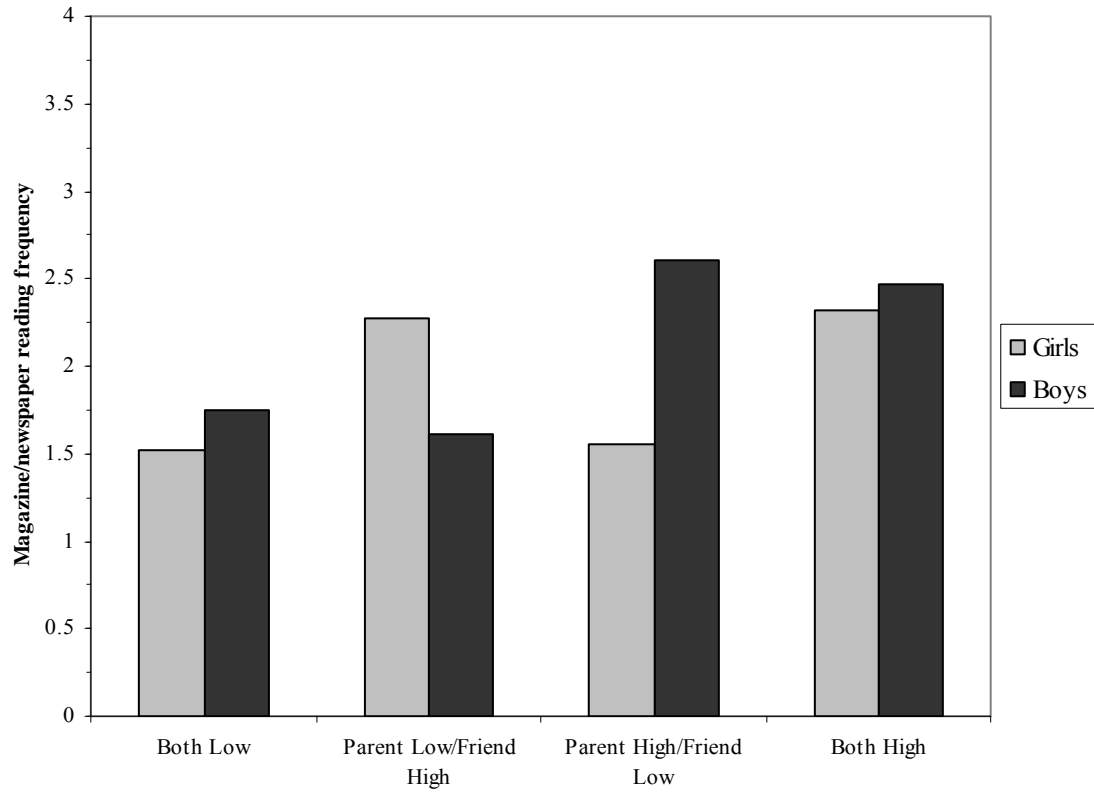


Figure 2. Plot of significant Gender x Parent General/Book Support and Gender x Friend Support interactions.

Hypothesis 7

Overview

To test the final hypothesis, which predicted that children with different profiles of reading support would differ in reading motivation and frequency, cluster analysis was conducted, using the four reading support dimensions that emerged through the factor analysis as grouping variables: parent general/book support, other media support, friend support, and books as presents. This analysis included all four reading support variables, in contrast to the regressions conducted to test Hypothesis 6, because it was intended to provide a broader perspective on children's experience of reading support and to serve as a more exploratory analysis.

Cluster analysis groups together individuals who show similar scores on each of the variables in the set of interest. Then additional analyses can be conducted to investigate how cluster membership is linked to other variables. It should be emphasized that cluster analysis is a highly exploratory procedure driven more by data than by theory. Nevertheless, it is a useful procedure because it offers insight into what combinations of scores on the grouping variables are repeatedly occurring in one's sample, or, more simply, what are the most common profiles of scores. As explained by Murdock and Miller (2003, p. 384), who used both regression and cluster analysis to better understand how academic support from several sources contributed to students' academic motivation:

...although researchers can [use regression] to develop an equation that will allow them to predict how a combination of low parental support and high teacher support would affect motivation, there may be no students with these combinations of parent and teacher experiences...[we used]

person-centered clustering, which allowed us to describe the complex contexts the students in our study occupied.

Cluster analysis is often critiqued as lacking generalizability; analyses of different samples do not often produce exactly the same set of clusters. While a single cluster analysis likely will not represent all patterns of scores on the grouping variables that exist in a population, it can offer insight into general questions such as whether individuals tend to show mixed profiles of support (i.e., combinations of low and high values on the grouping variables) and whether there appear to be additive effects on motivation scores based on the number of support dimensions on which one scores highly.

As recommended by Hair et al. (2006), hierarchical clustering procedures were employed as a preliminary step to the nonhierarchical method of *k*-means analysis. Hierarchical methods have the advantage of providing a large range of possible solutions through one analysis, while separate *k*-means analyses must be conducted to obtain solutions with different numbers of clusters. Also, hierarchical methods produce values that can be used as initial seed points or cluster centers in *k*-means analyses. *K*-means analysis is commonly employed to obtain a final solution because it enables cluster centers to change with each iteration of the procedure, and with each iteration, a case may switch clusters if it becomes more similar to a different cluster. In contrast, with hierarchical methods, cluster assignments are permanent. Therefore, *k*-means analysis should more accurately represent the structure of groups in the data. *K*-means analysis also tends to produce clusters more equivalent in membership numbers than hierarchical procedures, making follow-up analyses based on cluster membership more straightforward. Plus, *k*-means analysis is less influenced by outliers and the distance measure selected for use (Hair et al., 2006).

In all analyses, standardized grouping variables scores were used; since the reading support variables were not all on the same raw score scale, standardization assured that they would each influence the clustering procedures equally (Hair et al., 2006). Only participants with scores for all grouping variables were included. Also, two individuals were eliminated in the preliminary step because they were clearly outliers, that is, they repeatedly appeared as single-member clusters. This left 243 participants in the analyses.

Preliminary Hierarchical Analyses

For the preliminary hierarchical step, the participants were clustered on the four grouping variables using the average (or between groups) linkage and complete linkage (or furthest neighbor) algorithms. Distance was measured as squared Euclidean distance, which compared to simple Euclidean distance, helps to emphasize the variation in the data set by increasing the spacing of dissimilar clusters (G. Hancock, EDMS 771/Multivariate Data Analysis lecture, March 30, 2006). Based on the agglomeration coefficients produced by these analyses and the within- versus between-group variance associated with each cluster solution, three solutions were retained for refinement through *k*-means analysis. The solution that appeared most suitable for further analysis was the 5-cluster solution obtained through complete linkage. The 4-cluster solution obtained through complete linkage and the 5-cluster solution obtained through average linkage were also retained as less likely but potentially able to lead to the best *k*-means solution. The other 4-cluster solution and all solutions with fewer clusters were eliminated based on their agglomeration coefficients. Solutions of six clusters or more were dropped from

consideration because they all included small clusters (seven members or less) that likely represented small segments of the population or outliers.

Nonhierarchical K-means Analyses

The cluster centers, or means on each of the grouping variables, from each of the retained hierarchical solutions were used as a set of initial seed points for a nonhierarchical analysis. The nonhierarchical analyses were conducted with SPSS's algorithm for *k*-means analysis, which uses the simple Euclidean distance measure and the single linkage (or nearest neighbor) method to link cases and clusters. This method combines the two clusters at each step that have the shortest distance from any member of one cluster to any member of another cluster.

Table 23 displays standardized means on the grouping variables for each of the three *k*-means solutions. Following Murdock and Miller (2003), a cluster mean was considered low if it was half a standard deviation or more below the sample mean, high if it was half a standard deviation or more above the sample mean, and average if it fell in between. The main difference between the 4- and 5-cluster complete-linkage based solutions is that the 5-cluster solution added a cluster distinguished by especially high scores on books as presents, and average to low scores on the other reading support dimensions. The two 5-cluster solutions are distinguished perhaps most notably by Cluster 3 scoring in the average realm for parent general/book support in the complete linkage-based solution, versus in the high realm in the average linkage-based solution. Also, Cluster 5 scored in the high realm on friend support in the complete linkage-based solution, versus in the average realm in the average linkage-based solution.

Table 23

Nonhierarchical Cluster Analysis Solutions: Cluster Centers (Standardized Means)

4-cluster k-means solution (initial seed points from complete linkage analysis)				
Cluster number (n)	Parent general/ book support	Other media support	Friend support	Books as presents
1 (40)	.93 (high)	.43 (avg.)	.80 (high)	1.70 (very high)
2 (76)	-1.11 (low)	-.75 (low)	-.88 (low)	-.42 (avg.)
3 (80)	.14 (avg.)	-.26 (avg.)	.04 (avg.)	-.41 (avg.)
4 (47)	.77 (high)	1.29 (high)	.66 (high)	-.07 (avg.)
5-cluster k-means solution (initial seed points from complete linkage analysis)				
Cluster number (n)	Parent general/ book support	Other media support	Friend support	Books as presents
1 (26)	1.11 (high)	.66 (high)	1.45 (high)	1.57 (very high)
2 (58)	-1.29 (low)	-.75 (low)	-.93 (low)	-.64 (low)
3 (24)	.16 (avg.)	-.40 (avg.)	-.45 (low-avg.)	1.46 (high)
4 (75)	-.05 (avg.)	-.38 (avg.)	-.05 (avg.)	-.53 (low)
5 (60)	.77 (high)	1.07 (high)	.51 (high)	.02 (avg.)
5-cluster k-means solution (initial seed points from average linkage analysis)				
Cluster number (n)	Parent general/ book support	Other media support	Friend support	Books as presents
1 (41)	.91 (high)	1.00 (high)	1.46 (high)	.52 (high)
2 (71)	-1.14 (low)	-.74 (low)	-.91 (low)	-.48 (avg.-low)
3 (21)	.61 (high)	-.42 (avg.)	-.32 (avg.)	1.91 (very high)
4 (71)	-.01 (avg.)	-.33 (avg.)	.09 (avg.)	-.52 (low)
5 (39)	.81 (high)	1.11 (high)	-.19 (avg.)	.23 (avg.)

To select the best of the three solutions, the ratio of mean within-cluster distance (the distance of a case from its centroid) to mean between-cluster distance (the distance between cluster centroids) was calculated for each of the three solutions obtained, a procedure recommended by Milligan and Cooper (1985) and used in Baker and Wigfield (1999). The lowest ratio, which is taken to indicate the most appropriate cluster structure, was associated with the 5-cluster solution that used seed points from the complete linkage method. ANOVAs that employed cluster membership as the independent variable and the grouping variables as dependent variables also supported this solution; they showed that within-groups variance was smaller than between-groups variance for each grouping variable, indicating that each variable influenced the formation of the clusters. (This was also the case for the 5-cluster average linkage-based solution, but not the 4-cluster complete linkage-based solution.) Thus, the 5-cluster complete linkage-based solution was selected for employment in subsequent analyses. The clusters were identified as follows: Cluster 1—High perceived support; Cluster 2—Low perceived support; Cluster 3—High perceived books as presents; Cluster 4—Moderate to low perceived support; Cluster 5—High perceived support, especially for other media.

As recommended by Hair et al. (2006), to further validate the selected solution, a 5-cluster *k*-means analysis using random initial seed points was run. Clusters 1, 3, and 4 of this solution (see Table 23) generally coordinated, respectively, with Clusters 1, 2, and 4 of the complete linkage-based solution. Clusters 2 and 5 both showed similarities with Cluster 5 of the complete linkage-based solution, except on friend support. Cluster 4 also showed general similarity to Cluster 3 of the complete linkage-based solution except in books as presents.

Table 24

Nonhierarchical 5-Cluster Analysis Solution with Random Initial Seed Points: Grouping Variable Means (Standardized)

Cluster number (n)	Parent general/ book support	Other media support	Friend support	Books as presents
1 (31)	.96 (high)	.33 (avg.)	.73 (high)	1.87 (very high)
2 (37)	.64 (high)	1.11 (high)	-.28 (avg.)	-.05 (avg.)
3 (52)	-1.35 (low)	-.84 (low)	-1.04 (low)	-.51 (low)
4 (84)	-.15 (avg.)	-.50 (low)	-.11 (avg.)	-.40 (avg.)
5 (39)	.75 (high)	.87 (high)	1.32 (high)	.11 (avg.)

Cluster Characteristics

Based on the 5-cluster complete linkage-based solution, a series of ANOVAs was conducted to determine whether cluster membership was associated with differences in reading motivation and frequency. As shown in Table 25, there were significant differences among the clusters in all reading motivations, except competition, and in all reading frequency variables; the same pattern of results holds with and without making a Bonferroni adjustment to the alpha level for each family of ANOVAs. Post-hoc tests were conducted to specify the nature of the differences. It should be noted that the standard *F* statistic and Tukey-Kramer tests are reported for most of the dependent variables. Tukey-Kramer post-hoc tests are appropriate when group sizes are quite dissimilar, but the groups show relatively equal variance. For the analyses involving autonomy and efficacy/challenge, however, there was nonhomogenous variance in addition to unequal group sizes. In such a situation, Welch's statistic is more appropriate

for assessing main effects and Games-Howell tests are more appropriate for comparisons, and so are reported for these two analyses (Garson, n.d.).

Finally, while the hypotheses did not concern the gender or grade-level composition of clusters, Chi square tests were conducted to determine if there were any associations between these variables and cluster membership. The tests indicated that gender was not associated with cluster membership, but grade level was ($\chi^2 = 9.85$, $p \leq .05$). Examination of count statistics suggested that this significant result was due to Cluster 3 containing more fourth-graders than expected (17 versus 10.6 expected out of the 24 cluster members) and possibly to Cluster 5 including fewer fourth-graders than expected (20 versus 26.4 expected out of the 60 cluster members); otherwise, the observed and expected counts for grade level were within .6 of each other. Also, a set of ANOVAs was conducted to check whether the clusters differed in reading achievement; they did not differ in any of the three variables available for analysis (WJ III Fluency, DIBELS ORF, and reading grades).

Table 25

Reading Motivation and Frequency of Five Clusters in Final Solution

Variable	C1 <i>M</i> (<i>SD</i>)	C2 <i>M</i> (<i>SD</i>)	C3 <i>M</i> (<i>SD</i>)	C4 <i>M</i> (<i>SD</i>)	C5 <i>M</i> (<i>SD</i>)	Main effect <i>F</i> (df)	Eta ²	Post-hoc comparisons
Autonomy	14.33 (1.68)	12.07 (2.32)	13.04 (3.13)	12.92 (2.36)	13.63 (1.87)	6.57 (4, 78.22)***	.08	1>2***; 1>4*; 5>2***
Efficacy/ challenge	25.23 (2.07)	21.35 (4.89)	22.92 (4.42)	23.23 (3.53)	24.22 (3.49)	6.84 (4, 84.48)***	.09	1>2***; 1>4*; 5>2***
Knowledge goals/interest	22.43 (4.12)	17.55 (4.81)	20.54 (4.77)	19.90 (4.15)	21.39 (3.97)	7.71 (4, 226)***	.12	1>2***; 3>2*; 4>2*; 5>2***
Competition	10.59 (3.90)	10.91 (3.41)	11.13 (3.77)	11.14 (3.23)	10.79 (3.68)	.16 (4, 224)		
Recognition	17.68 (2.71)	14.29 (2.93)	16.58 (3.75)	16.21 (2.81)	17.03 (2.43)	9.13 (4, 229)***	.14	1>2***; 3>2*; 4>2*; 5>2***
Information books	2.77 (.82)	1.86 (1.01)	2.21 (.98)	2.12 (.87)	2.25 (.80)	4.84 (4, 236)***	.08	1>2***; 1>4*
Story books	2.88 (.82)	2.74 (1.00)	2.96 (.82)	2.79 (.95)	3.27 (.78)	3.25 (4, 236)*	.05	5>2*; 5>4*
Mags. and news.	2.31 (1.19)	1.54 (1.14)	2.17 (.96)	1.92 (1.17)	2.36 (1.06)	4.57 (4, 236)***	.07	1>2*; 5>2***
Web sites	2.12 (1.21)	1.58 (1.34)	1.63 (1.06)	1.48 (1.09)	2.42 (1.09)	6.78 (4, 236)***	.10	5>2***; 5>3*; 5>4***

Note. For autonomy and efficacy/challenge, Welch's statistic is reported for the main effect (rather than the standard *F* statistic), and Games-Howell results are reported for the post-hoc tests (rather than Tukey-Kramer comparisons). * $p \leq .05$, ** $p \leq .01$. *** $p \leq .001$.

Overall, the five clusters of the complete linkage-based *k*-means solution may be summarized with respect to perceived reading support, motivation, and frequency as follows:

Cluster 1—High perceived support: The 26 students in this cluster scored the highest on all reading support dimensions except other media support, on which they scored positively but second to Cluster 5. This cluster showed a positive profile of reading motivation and frequency. Specifically, this cluster scored higher on knowledge goals/interest, recognition, and magazine/newspaper reading than Cluster 2 (Low perceived support). This cluster also scored higher than Cluster 2 and Cluster 4 (Moderate perceived support) on autonomy, efficacy/challenge, and information book reading.

Cluster 2—Low perceived support: This 58-member cluster showed the most negative profile, scoring the lowest on all dimensions of perceived reading support. Notably, this cluster scored significantly lower than all other clusters on knowledge goals/interest and recognition. This cluster also scored significantly below Clusters 1 and 5 (the clusters with the greatest perceived reading support) on autonomy, efficacy/challenge, and magazine/newspaper reading. Cluster 2 also scored lower than Cluster 1 in information book reading and lower than Cluster 5 in story book and web site reading.

Cluster 3—High perceived books as presents: The 24 children in this cluster, which as noted above contained a disproportionate number of fourth-graders, scored similarly to Cluster 1 in books as presents, but otherwise reported average to low reading support; this cluster showed altogether the most mixed profile of reading support. In

terms of significant differences in reading motivation and frequency, this cluster only scored higher in knowledge goals/interest and recognition than Cluster 2 and scored lower than Cluster 5 in web site reading.

Cluster 4—Moderate to low perceived support: With 75 children, this is the largest cluster. It is marked by average perceived parent general/book support and friend support, and low-average other media support and books as presents. This cluster scored significantly lower than Cluster 1 in autonomy, efficacy/challenge, and information book reading and lower than Cluster 5 in story book and web site reading. Cluster 4 scored higher than Cluster 2 only in knowledge goals/interest and recognition.

Cluster 5—High perceived support, especially for other media: The 60 students in this cluster, of whom somewhat more than expected were fifth-graders, showed the second-most positive profile of reading support overall, scoring the highest on other media support and the second highest on parent general/book support and friend support. This cluster, notably, did not differ at all from the most positive reading support profile (Cluster 1) in any reading motivation or frequency variables. Cluster 5 scored significantly higher than Cluster 2 on the same set of variables as Cluster 1, plus story book and web site reading. It also scored higher than Clusters 3 and 4 on web site reading and higher than Cluster 4 on story book reading.

Chapter 5: Discussion

The overarching goal of the present study was to increase understanding of older children's perceptions of support for recreational reading and how these perceptions relate to children's reading motivation and habits. For the purposes of this study, the Reading Support Survey (RSS), a preliminary form of which was employed in a pilot study, was considerably refined. This measure is distinct from most other questionnaires used to assess social aspects of children's reading in that it asks children to rate their mothers, fathers, and friends individually, and includes items pertaining to magazines, newspapers, and web sites as well as books and reading in general. On the RSS, children rated how frequently each socialization agent of interest engaged in several behaviors that should, theoretically, promote reading, and also rated how much they enjoyed certain reading-related interactions with each person. Thus, in contrast to most previous research concerned with the socialization of children's recreational reading, this study was designed in such a way that children's perceptions of reading support from different sources and the relations of these perceptions to children's reading motivation and habits could be statistically analyzed and compared.

Seven hypotheses were tested in the present study. They concerned the underlying dimensions of perceived reading support, differences in children's perceived reading support from different sources, the interplay of gender and grade level with perceived reading support, motivation, and frequency, and the relations of perceived reading support to reading motivation and frequency. Each hypothesis is first discussed individually, primarily with respect to previous research in the reading domain, the study of social support in other domains, and measurement issues specific to the present study.

The findings are then discussed in a more integrated manner with regard to their meaning in the context of the broad theories of motivation which guided this study. In addition, issues pertaining to the reliability and validity of using the RSS are addressed, and lastly a number of directions for future research are described.

Summary and Interpretation of Findings

The Dimensionality of Perceived Reading Support

The first hypothesis, which predicted that children would perceive their mothers, fathers, and friends as distinct sources of support for their reading, was partially supported. In line with this hypothesis, a distinct friend support factor emerged when the 34 main items of the RSS underwent factor analysis. *Friend support* included items that concerned friends' support of book reading, magazine and newspaper reading, and reading in general (as represented by items that did not refer to a particular type of reading material). Contrary to prediction, separate mother and father factors did not emerge; rather, one factor emerged that exclusively included mother and father items, all pertaining to books or reading in general (*parent general/book support*). Thus, several aspects of perceived support from mothers and fathers clearly were highly associated with each other, but not with support provided by friends. However, even this distinction between support from parents and friends did not entirely hold, as the other two factors that emerged each included a mixture of friend and parent items. *Other media support* included parent items concerning magazines/newspapers and web sites as well as friend items concerning web sites. *Books as presents* included items concerning how many books children received in the past year from both friends and parents. In sum, perceived

reading support appeared to have underlying dimensions defined by source of support, as much as by type or content of support.

This pattern of support dimensions, half defined by source and half defined by type of support, conflicts with that identified in the pilot study, in which each of the three factors that emerged represented a different source of support (mother, father, and best friend). The discrepancies between the factor structures obtained in the current study and the pilot partially might be accounted for by differences in the items and samples employed in each study. The items of the RSS, used in the current study, referred either to books, magazines/newspapers, web sites, or reading in general, whereas on the P-RSS, used in the pilot, all items referred to reading in general. Perhaps the RSS items prompted children to think as much along “type” lines as “source” lines, whereas source was the only obviously distinguishing factor in the wording of the P-RSS items.

Regarding the differences in the samples, the participants in the current study lived in a rural area, whereas those in the pilot lived in a suburban area of a mid-sized city. This difference might help explain why children perceived mother and father support separately in the pilot but not the current study. Perhaps in rural settings, commonly associated with a less hectic pace of life, children spend more time with their parents together and perceive more of an alliance between their parents in the views they hold and activities they act to support. The samples also differed in that the current one included both fourth-graders and fifth-graders, whereas the pilot just included fifth-graders, and in that the pilot sample was much more ethnically diverse. On the other hand, the samples were similar in SES, as both were drawn from communities comprised of families of mainly working- to middle-class backgrounds. Replication of factor

analysis of the RSS with data from large samples of children varied in age, ethnicity, type of setting, and SES would certainly be needed to come to stronger conclusions about the underlying dimensions of perceived reading support.

The factor structure identified in the current study also differs from that identified in three studies of children's perceived support in life in general (Malecki & Demaray, 2002, 2003; Malecki & Elliott, 1999). In each of these studies, factors only represented source of support, namely close friends, classmates, teachers, and parents; it should be noted, though, that in contrast to the current study, items referred to "parents" rather than to mothers and fathers separately, so these studies do not offer insight into the question of whether in general children tend to distinguish between support from mothers and fathers. The current factor structure does, however, mesh with Robinson's (1995) finding, from her study of non-domain specific support, that a model that grouped perceived support items by source and type fit better than one that factored them only by source (which fit better than one that factored only by type).

In several regards, the factors identified in the current study are in accord with research in the reading domain. For example, the finding that corresponding mother and father items always emerged on the same factor (except the *reads aloud* items) corresponds with studies indicating that there is sometimes a general culture of literacy, or aliteracy, in the family (Chandler, 1999; Strommen & Mates, 2004). In addition, parent general/book support and friend support mostly comprised the same item content, complementing Ivey's (1999a, 1999b) demonstration in qualitative studies that peers influenced children's reading in many of the same ways that adults do. Lastly, the composition of parent general/book support suggested that parents support older

children's reading in many of the ways that they support younger children's – by generally encouraging reading activities, talking with them about specific reading materials, helping them choose books, modeling reading, and, to an extent, reading aloud with them (Baker et al., 1997); notably, *father reads aloud* loaded, albeit lowly, on the parent general/book support factor, although *mother reads aloud* did not.

Further comment is due on the emergence and composition of the two “type” factors. For example, parent items concerning magazines/newspapers and web sites loaded on other media support, separate from other parent items, as did friend items concerning web sites, separate from other friend items. Perhaps magazine/newspaper reading factored with general and book reading support for friends but not parents because parents convey to children that they do not consider magazine and newspaper reading at the same level of importance as book reading. Children may know that when their parents encourage them to read, they mean read books, not other kind of materials, even if they do not explicitly say so. To children and their friends, however, magazine and newspaper reading may seem as important and worthwhile as reading books. These speculations align with the perspectives and findings of Smith and Wilhelm (2002) and Love and Hamston (2004), who contended that parents, teachers, and other adults often privilege certain types of reading over others, and discount children's activities that involve reading (surfing the Internet, playing video games that have large amounts of text), but are not reading in the traditional sense (reading books, particularly classic or highly acclaimed fiction). As for why friend items concerning web sites factored separately from those concerning magazines and newspapers, this might reflect a general

perception in the community where the study was conducted that viewing web sites is an entirely different activity from other kinds of reading.

The emergence of books as presents as a separate dimension of reading support coheres with Edmunds and Bauserman's (2006) finding, from open-ended interviews with fourth-graders, that buying or giving books was one of three categories of responses to the question of what others do that makes the children feel excited about reading. That is, it seems that from children's perspective, receiving books is an event that stands out, and, based on its emergence as a separate factor here, an experience that may be largely unrelated to other aspects of reading support. On the other hand, this factor might simply be a methodological artifact as the items concerning books as presents employed a different set of answer choices than all other RSS items.

Perceived Reading Support: Mothers vs. Fathers vs. Friends

The second hypothesis stated that children would perceive greater levels of reading support from their mothers than from their fathers or friends. This hypothesis received substantial support. Children's ratings indicated that they perceived more support from their mothers than their fathers on seven of the 11 behavioral items of the RSS and all three affect items. They also rated their mothers higher than their friends on eight of the behavioral items and one of the affect items. For no items did children rate their friends or fathers higher than their mothers. Furthermore, 47% of children selected their mother as the person who most influences their recreational reading (including those who selected their mother and someone else), while only 18% selected their father (including those who selected both mother and father) and 12% selected a friend. These findings align well with previous research in the reading domain, including pilot study

findings and the finding of Edmunds and Bauserman (2006) that fourth-graders most frequently cited their mother when asked in an open-ended manner about who gets them interested in reading. They also demonstrate that not only do parents recognize differences in mothers' and fathers' encouragement of reading (Love & Hamston, 2004), children at least as young as fourth- and fifth-graders do, too. Notably, the pattern observed is also consistent with findings from Bouchey and Harter's (2005) investigation that compared perceived mother, father, and peer (albeit classmate rather friend) support in the math/science domain.

Analyses more exploratory in nature were conducted to see if children differed in their perceptions of support from their fathers and friends, and if results for the whole sample held separately for each gender. With regard to the former, children rated their fathers higher than their friends on six items, all of which were items on which mothers likewise received higher ratings than friends. While this finding may not be surprising, given that a child's engagement in reading is generally probably more of a concern to the child's parents than the child's friends, it is noteworthy since this was the first study, to my knowledge, to explicitly compare perceived reading support from fathers and friends. These findings, which generally indicate that the level of support provided by friends is low compared to that provided by both fathers and mothers, raise the question of whether educators should encourage more social interaction around reading, to try to improve children's perceptions of reading support from their friends; this question is addressed in the discussion of findings pertaining to the relations of friend support with reading motivation and habits.

Of the total of 42 comparisons made for each gender, nine produced significant results for one gender but not the other. Perhaps most notably, only girls reported that they enjoyed reading interactions more with their mothers than with their fathers, in all three regards considered. This finding aligns with the contention that reading is viewed at large by society as a feminine activity, which girls and women especially enjoy interaction about with each other (Love & Hamston, 2004; Millard, 1997). This finding also indicates that boys equally enjoyed reading interactions with their fathers and mothers, thus suggesting that for boys, positive interactions around reading with each parent might be associated equally with positive feelings about reading. On the whole, though, the separate comparisons conducted for each gender showed that girls and boys largely perceived the same kinds of differences in their mothers' and fathers' support for reading and their parents' versus their friends' support.

Reading Support, Motivation, and Frequency by Gender and Grade Level

The third hypothesis stated that girls would show a more positive profile of perceived reading support, reading motivation and reading frequency than boys, and that fourth-graders would show a more positive profile of these variables than fifth-graders. This hypothesis was supported more with regard to gender than to grade-level, although even the gender differences observed were not extensive. First, with regard to gender differences, girls reported more friend support than boys; they did not, however, differ from them in the other three dimensions of perceived support. This finding complements the separate comparisons conducted by gender in the test of Hypothesis 2, which indicated that there were four instances where only boys reported a higher level of support from one of their parents than their friends; that is, girls' perception of greater

reading support from friends may partly explain why they did not perceive as many differences between parent and friend support as did boys. In addition, this finding that girls and boys differed in perceived levels of friend support but not parent general/book support, builds on the findings of previous studies which indicated that girls reported greater social interaction in reading, but in which items referring to family and friends were part of the same scale (Baker & Wigfield, 1999; Guthrie & Wigfield, 1997). Lastly, the gender difference in friend support found in the present study aligns with boys' and girls' differing reports of friends' provision of social support in life in general (Malecki & Demaray, 2002, 2003; Robinson, 1995).

Gender differences were also found in motivation; girls reported greater reading motivation than boys on two of the five dimensions assessed. One was perceived autonomy, a dimension that has received relatively little attention in other studies of reading motivation, but which girls also scored more highly on in the pilot study. This finding conflicts with research in the general academic domain, which shows no consistent gender differences in perceived autonomy (Grolnick et al., 2002). As suggested by Grolnick et al., though, sometimes girls may indicate greater autonomy not because they actually feel more autonomous, but because they are more likely to engage in behaviors that represent autonomy in order to please others. Consider, for instance, the item "I usually have a book to read," from the PRMQ's autonomy scale. Endorsement of this item could either reflect actual internalization of the value of reading and hence autonomy, or a tendency to conform with those who value reading (or a desire to represent oneself as conforming with such people). Girls also reported a greater sense of recognition than boys, consistent with Baker and Wigfield's (1999) study of fifth- and

sixth-graders' reading motivations, and more frequent reading of story books. These differences might also reflect greater effort by girls to behave in ways that gain the attention and approval of others, especially adults like parents and teachers. With this interpretation, it makes sense that girls would particularly report greater story book reading, given indicators that many adults seem to value fiction reading over other kinds of reading (Love & Hamston, 2004; Smith & Wilhelm, 2002).

There was also possible evidence that girls enjoyed social interactions around reading with their mothers and friends more than boys did; however, three of the four item differences indicating this were significant based only on alpha values unadjusted for the increased likelihood of Type 1 error due to the large number of analyses conducted. Thus, further study of gender differences in affect around reading interactions with a larger sample is needed before drawing strong conclusions about this issue.

Taking into consideration the number of gender differences that were found, plus the small effect sizes associated with the significant differences that were identified, altogether it appears that there are not major differences in girls' and boys' perceived reading support, motivation, and frequency. Greater gender differences might be observed in a sample of older children, or, perhaps, the current findings reflect a decline in children's viewing of reading as an activity more appropriate for girls than boys.

As indicated above, the hypothesis concerning grade-level differences received even more limited support. With regard to the four dimensions of reading support, fourth-graders only scored higher than fifth-graders on books as presents; it is hard to imagine why fourth-graders would actually be given more books, and thus seems more likely to reflect differences in children's accuracy of recollecting or estimating the books they

received in the past year. Fourth-graders also indicated greater motivation by competition and recognition, and more frequent reading of information books, but the findings for recognition and information books were only significant with alpha unadjusted to account for Type 1 error. And one finding was entirely contrary to the hypothesis: fifth-graders reported more frequent reading of magazines/newspapers than fourth-graders.

In one regard, reading aloud with friends, fourth-graders reported that they enjoyed interaction about reading more than fifth-graders; this finding, however, was only significant with the unadjusted alpha value. However, even with the adjusted alpha, there was evidence of a significant interaction for enjoyment of reading aloud with friends, such that fourth-grade boys especially enjoyed this activity, whereas fifth-grade boys especially did not. Keeping in mind that boys only responded to the enjoyment item if they indicated that they do read out loud with their friends at least “rarely”, it would be necessary to know more about the contexts in which the joint reading typically took place to explain why these boys only one grade level apart differed in their feelings about the activity.

On the whole then, the current study provided little evidence that children one grade level apart in late elementary school differ substantially in their perceptions of reading support, motivation, and frequency. This corresponds with other research which has likewise offered mixed findings about whether fourth- and fifth-graders (McKenna et al., 1995; Wigfield & Guthrie, 1997) or fifth- and sixth-graders (Baker & Wigfield, 1999) differ in reading motivations and attitudes. Furthermore, the small effect sizes for grade level, as well as gender, obtained in the analyses used to test Hypothesis 3 suggest that even the significant differences identified may be of limited practical importance. To

better understand the extent to which children's perceptions of reading support and motivation change over time, and the extent to which these changes are related, comparison of elementary level students with students at lower and higher levels of schooling are needed.

Relations of Perceived Reading Support, Motivation and Frequency

In some respect, Hypotheses 4, 5, 6, and 7 each concerned the relations of perceived reading support, motivation, and frequency. The outcomes of the analyses conducted to test these hypotheses are discussed in turn below.

Hypothesis 4, which predicted that each reading support dimension would relate positively to the intrinsic reading motivation dimensions of autonomy, knowledge goals/interest, and efficacy/challenge and to reading frequency when individually examined, was substantially supported as 25 of the 28 correlations (4 reading support dimensions x 7 reading motivation and frequency variables) relevant to this hypothesis were significant and positive, though weak to moderate in magnitude. This finding complements previous research that employed a scale which included items referring to both family and friends, and showed weak to moderate correlations of this scale with reading efficacy, curiosity (analogous to knowledge goals/interest in the present study), and reading amount (Baker & Wigfield, 1999; Wigfield & Guthrie, 1997). That is, the present study elaborates on these previous studies by showing that multiple dimensions of reading support relate positively to reading motivations and habits.

The correlations obtained to test Hypothesis 4 can also be compared with those found in several studies that examined the relation of parent reports of their support for recreational reading with children's reports of their recreational reading activity (Greaney

& Hegarty, 1987; Hansen, 1969; Neuman, 1986). Generally, the current correlations fall in the middle of the range of correlations reported in these studies. This offers some evidence that the correlations found in the present study cannot be explained fully by shared method variance in the self-report measures. The magnitude of the correlations in the current study as well as in previous research, however, suggests that on the whole reading support or social interaction in reading may not play a central a role in many older children's reading motivation and habits.

The lack of correlation between story book reading and books as presents, and the generally low correlations of story book reading and the other dimensions of perceived reading support, may have another explanation. In some classrooms in which data was collected, students were required to read novels of their choice in their "free time." Therefore, this item would be an invalid indicator of children's recreational reading, if children who read in their free time only because they are required to do so counted their required self-selected reading when responding to the story book reading item. The rather high mean for this item compared to the means of the other reading frequency items suggests that this likely occurred to some extent.

Hypothesis 5, which predicted that each reading support dimension would relate negatively to the extrinsic reading motivation dimensions of recognition and competition, was not supported. Rather, each reading support dimension related positively to recognition, and none of the reading support dimensions correlated significantly with competition. These findings suggest the value of examining the relation of perceived support to multiple motivations that fall within the same broader type of motivation, meaning here, extrinsic motivation. In line with previous studies (Baker & Wigfield,

1999; Wigfield & Guthrie, 1997), which showed that some extrinsic reading motivations are positively associated with reading activity, the present one showed that one kind of extrinsic motivation was positively linked with frequent experience of reading as a social activity, while another kind was neither positively nor negatively linked with it.

Examination of the items used to measure the motivation of recognition help shed light on why it in particular related positively to perceived reading support. Essentially, each of the items that comprise the recognition scale (e.g., “My friends sometimes tell me I’m a good reader”; “My parents often tell me what a good job I am doing in reading.”) indicate positive communication with others about reading. From one perspective, then, the positive correlations between recognition and perceived reading support are a measurement artifact. That is, strong endorsement of the recognition items implies relatively frequent interaction with others related to reading. For instance, a parent or a friend could not offer complements on a child’s reading if they did not interact with the child, or at the least, observe the child in reading activities. In other words, “somewhat true” and “very true” responses to the recognition items require strong endorsement of the RSS items.

Another interpretation of the positive correlations between recognition and the perceived support dimensions is that the recognition items measured children’s perceptions that others emotionally support them as readers. Given studies in other domains that indicate that perceptions of different types of support are often quite positively associated and that type of support is not the major organizing element of children’s support perceptions (e.g., Malecki & Demaray, 2003; Robinson, 1995), it makes sense, then, that this scale would correlate positively with the reading support

dimensions, which primarily represent another type of support, instrumental support. Furthermore, assuming for the moment that children's perceptions are accurate indicators of others' actual behaviors, it seems natural that those who act in ways that promote reading (i.e., engage in the behaviors about which the RSS inquires) would also tend to offer recognition in the form of complements or tangible rewards for children's efforts and successes in reading, as both encouraging and recognizing reading reflect high value for it.

The finding that none of the reading support dimensions correlated with competition meshes with Baker and Wigfield's (1999) and Wigfield and Guthrie's (1997) findings that the social dimension of reading motivation showed no relation to competition. This finding could mean that perceptions of reading support from parents and friends simply have no bearing on children's sense of wanting to compete with others through reading. Rather, competition might be largely related to whether teachers and schools foster or allow competition about reading. For example, many students in the present study were eager to share their performance on the WJ III fluency with each other and with their teachers, to check how well they performed compared to others, and teachers generally did not discourage this behavior.

Alternatively, explanations could be devised for why children high or low in perceived reading support from parents and friends could be highly competitive, or could be highly non-competitive. For instance, some children who experience much reading support might be getting the message that it is very important to be a good reader, and may think that the way to show they are a good reader is to compete with others in reading. Other children who perceive high support may be getting the message from

others that reading is something simply to enjoy, rather than something to worry about being good at compared to others. These possibilities reflect the emphasis in research involving younger children that whether parents view reading as entertainment or as a basic skill impacts children's reading motivation and engagement (Baker et al., 1997; Baker & Scher, 2002).

The lack of relations between competition and perceived reading support might also reflect differences in the measurement of competition and the other motivation constructs. When the PRMQ was administered, students were told to think about their recreational reading, except when items clearly applied to school reading. The exceptions included all four items representing competition; two items referred explicitly to class and the other two implicitly applied to school reading. Except for one item representing self-efficacy, students were directed to respond to all other PRMQ items with respect to their recreational reading. Had competition been measured with respect to recreational reading (perhaps with items like "I brag to my friends about how much I read in my free time," and "If my friends and I were reading the same book for fun, I would try hard to finish it first."), significant relations with perceived support from parents and friends may have been more likely.

Before proceeding to discussion of Hypothesis 6, two more exploratory analyses conducted as part of the analyses for Hypotheses 4 and 5 warrant comment. First, analyses conducted to examine gender differences in the relations of reading support with reading motivation and frequency did not produce significant results. This finding, if replicated with more power and with a causal design, may have implications for those concerned with improving children's reading motivation and activity. That is, it would

suggest that girls and boys may benefit from the same sources and types of reading support.

Second, zero-order correlations of reading support with reading motivation and frequency differed little from corresponding partial correlations that controlled for reading achievement, as in the pilot study; some partial correlations were slightly lower, some slightly higher, and some equivalent. This suggests that reading support relates to reading motivation and frequency to essentially the same degree for students at different achievement levels. To better discern how and the extent to which reading achievement affects the relations between aspects of reading support and reading motivation and frequency, a longitudinal study would be necessary. Such a study would offer insight into how change in one area (support, motivation, achievement) relates to changes in the other areas.

Hypothesis 6 asserted that both parent support and friend support would contribute uniquely to the prediction of reading motivation and frequency, but that parent support would be the stronger contributor. This hypothesis was supported for reading motivation, but not for reading frequency. Specifically, with regard to motivation, parent support (namely, the dimension of parent general/book support) and friend support both contributed significantly to the prediction of efficacy/challenge and knowledge goals/interest, controlling for students' reading fluency, grade level, and gender. Furthermore, as predicted, parent support appeared to be somewhat more closely associated with these motivations than friend support; that is, greater beta values were associated with parent support in final regression models which included parent and friend support and three control variables. For the other two motivations examined as

dependent variables in regression analyses, autonomy and recognition, parent support but not friend support contributed significantly to the prediction of each one in the final models. These findings mesh with the point made in the interview study conducted by Strommen and Mates (2004) that children see their family as playing a more central role in their reading activity and feelings about reading than their friends.

Why did parent and friend support both contribute significantly to some motivations, while only parent support contributed significantly to others? To answer this question, each motivation will be considered individually. First, in explanation of the findings for efficacy/challenge, it could be that children's interactions in reading with both parents and with friends, particularly if the friends are better readers, help children improve their reading skills. When children notice their improved reading skills, their feelings that they are competent readers and able to handle challenging reading materials, might also increase. Interactions with both parents and friends also offer opportunities for children to receive compliments on their reading, which might likewise build their efficacy/challenge motivation; as indicated by Schunk (1991), both ability and effort attributions for success offered by others lead to increases in children's self-efficacy. Perhaps parent support relates a bit more strongly to this motivation than friend support because parents are likely more purposeful about trying to build children's reading skills, and about offering positive feedback. In the other direction of causality, feeling efficacious about and enjoying challenges in reading might compel children to seek reading-supportive interactions with family and friends alike.

The finding that both parent and friend support contributed uniquely to knowledge goals/interest complements findings of several qualitative/mixed method

studies in which children were interviewed about who impacts their reading and asked to provide specific examples of how others have influenced the kinds of materials they read (Chandler, 1999; Edmunds & Bauserman, 2006; Ivey, 1999a, 1999b; Love & Hamston, 2001; Smith & Wilhelm, 2002; Strommen & Mates, 2004). That is, in each of these studies, the participants, who, taken together, covered the age range of upper elementary school students to high school seniors, cited their parents, friends, or both as key influences on their reading in general and their specific reading interests, such as Stephen King books (Chandler, 1999), military history (Love & Hamston, 2001), and hockey news (Smith & Wilhelm, 2002). Somewhat contradictory to the current finding that parent support predicted knowledge goals/interest more strongly than friend support, Edmunds and Bauserman (2006) found that fourth-graders most frequently cited their friends as affecting their book choices. But they also frequently mentioned parents, especially as a source of information book (vs. fiction) recommendations, which, given that the items of the knowledge goals/interest scale are more relevant to non-fiction than fiction reading, meshes with the finding that parent support related most strongly to knowledge goals/interest. Altogether, then, the unique contributions of parent and friend support to children's knowledge goals/interest may reflect the fact that children's reading interactions with both of these socialization agents are often centered on and may arise from the desire to share knowledge about specific topics.

The unique contribution of parent support to the prediction of autonomy and of recognition might be due to parents (but not friends) engaging in reading supportive behaviors with the goal of their children becoming avid, independent readers, who enjoy the pleasure of reading and/or its cognitive benefits in general. Thus, if parents provide

sufficient and effective reading support such that it leads children to internalize the value of reading, their children should report high perceived autonomy in reading, as described in more detail later in the section on the integration of study findings with SDT.

Similarly, parents who value reading and encourage it through their behaviors and words, may offer their children compliments or other forms of recognition when children act on the encouragement they provide, partly with the intention to further encourage children's reading. High levels of reading support from parents may also improve children's reading skills, and thus contribute to children's receipt of recognition for reading from others as well, and children's placement of importance on recognition for reading. Although friend support correlated significantly with perceived autonomy and recognition, the finding that it did not contribute to these motivations controlling for parent support suggests that the correlations were a bi-product of correlation between parent and friend support.

Furthermore, the lack of contribution of friend support beyond parent support to autonomy is in accord with the qualitative findings of Strommen and Mates (2004) that early adolescent readers reported indifference to what their peers thought about their enjoyment of reading. It may be that friend, or more generally, peer support for reading, or the lack thereof, has little bearing on whether children present themselves as autonomous readers.

As mentioned earlier, the sixth hypothesis received little support with regard to reading frequency. Consistent with the hypothesis, parent general/book support and friend support each showed some unique contribution to reading frequency, but contrary to it, friend support related more closely to reading frequency than parent support. Considering the full models for each of the four reading frequency variables, friend

support was a significant predictor of information book reading and web site reading for both genders, and a predictor of magazine/newspaper reading just for girls. Parent support appeared only as a significant predictor of one variable, magazine/newspaper reading, but just for boys. The interaction between support source and children's gender for magazine/newspaper reading is a further indicator of how girls connect their readings and their friendships more than boys, and how, in some regards, parent support seems more important for boys than girls.

It is particularly interesting that friend support but not parent support contributed to the prediction of information book reading and web site reading, given that both friend and parent support contributed uniquely to knowledge goals/interest. Perhaps, while interactions with both parents and friends encourage children to view reading as valuable for learning about particular subjects, it is primarily friend support that leads them actually to engage in reading about those subjects in information books or online (or reading about those subjects that leads children to elicit friend support, for example, by initiating discussion about what they have read). If so, this suggests an earlier tendency than does research in the broader social support literature (e.g., Furman & Buhrmester, 1992) for children to place more importance on support from friends than from parents.

Of importance to note, however, is that the full set of variables including reading fluency, grade level, and gender, accounted for relatively little variance in each of the reading frequency variables, especially compared to the variance that this set of variables accounted for in each motivation variable. This discrepancy may partly reflect issues with the measurement of reading frequency. Students may be less accurate indicators of how often they read than of their motivations for reading. Plus, each reading frequency

variable was represented by a single item, while each motivation was represented by a scale of four or more items with moderate to high internal consistency. Furthermore, it makes sense that the support variables would not contribute strongly to web site reading as the support variables included in the analyses for Hypothesis 6 were based primarily on items concerning support for reading in general and support for book reading in particular, and the factor analysis suggested that support for reading web sites is quite distinct from these kinds of support.

On the whole, the analyses conducted to test Hypothesis 6 add to current knowledge about older children's experiences of support for their reading as they indicate that perceived parent support and friend support each contributed positively and uniquely to the prediction of reading motivations and habits. Previous quantitative studies that studied children's social interactions and support for reading in relation to reading motivation and habits either focused solely on parent variables (e.g., Neuman, 1986) or a general social variable (e.g., Wigfield & Guthrie, 1997). Qualitative studies offered specific examples of the roles that parents and friends played in children's reading, but did not offer a sense of their relative contributions or whether they contributed to the same or different aspects of reading motivation and habits. The findings from testing Hypothesis 6 are also generally in accord with studies of how children's perceived support for school from multiple sources relates to aspects of school motivation. For example, the findings that support from parents and friends uniquely contribute to some of the same motivations coheres with Furrer and Skinner's (2003), Marchant et al.'s (2001), and Murdock and Miller's (2003) studies of the contributions of parent, peer, and teacher variables to school motivation and engagement.

Briefly, the question raised earlier of whether it may be worthwhile for educators to work to increase children's perceptions of friend support, which appear low relative to parent support, should be addressed. The finding that friend support contributed above and beyond parent general/book support to two motivations and uniquely to some aspects of reading frequency suggest that such efforts might be worthwhile. An experimental study, however, would be necessary to determine whether friend support (actual or perceived) is feasible to increase, and if so, if increases in it actually have causal impact on reading motivation and habits.

The seventh and final hypothesis, which stated that children could be grouped on the basis of their profile of scores on the reading support variables, and that the clusters which formed would differ in their reading motivation and frequency, was supported. Five distinct clusters of children were apparent in the sample: High perceived support (Cluster 1), Low perceived support (Cluster 2), High perceived books as presents (Cluster 3), Moderate to low perceived support (Cluster 4), and High perceived support, especially for other media (Cluster 5). For four of the five reading motivation variables studied, there were significant differences between at least three pairs of clusters. Consistent with findings related to Hypothesis 5, the only motivation variable that did not relate to cluster membership was competition. For each of the four reading frequency variables, there were significant differences between at least two pairs of clusters. With respect to the differences summarized here, one particularly notable finding was that Cluster 2 scored lower than every other cluster on two motivations, knowledge goals/interest and recognition, and lower than the two most positive profiles in several other regards. Given that nearly 25% of the sample fell in this cluster, this finding raises concern that there

may be a substantial number of upper elementary school children who neither connect reading to their relationships nor to their interests, and thus, about the extent to which such children will be engaged in reading for recreational as well as academic purposes as they grow older. Will the motivations of autonomy and efficacy/challenge, which were comparable for Clusters 2, 3, and 4, be sufficient for such children to sustain at least a minimal commitment to reading?

Additional analyses indicated that the clusters were generally equally representative of both grade levels and genders. One exception was that Cluster 3 (High perceived books as presents) contained a disproportionate number of fourth-graders, which coheres with the Hypothesis 3 finding that fourth-graders scored higher on this dimension than fifth-graders. Also, Cluster 5 (High perceived support, especially for other media) contained a relatively high number of fifth-graders; this connects the finding that students in this cluster scored higher than Cluster 2 (Low perceived support) on magazine and newspaper reading and the Hypothesis 3 finding that fifth-graders reported more frequent reading of magazines and newspapers than fourth-graders.

The clusters were also examined for differences in reading achievement, with no significant findings. This finding, like the finding that reading achievement had little impact on the correlations of reading support with reading motivation and frequency, suggests that the relations among reading achievement, support, and motivation are not directly linearly related. Perhaps perceived reading support plays an important role in helping some struggling readers maintain motivation and devote free time to reading, whereas some struggling readers may be struggling and lacking motivation and read little in their free time in part because they do not perceive much support for reading from their

family and friends. It is also possible that perceived reading support plays an important role for some highly skilled and motivated readers, but not for others.

The lack of relations between cognitive measures and reading support found here is interesting to consider with regard to the reading engagement model (Guthrie & Wigfield, 2000), which specifies that cognitive investment and motivation and social interaction are all requirements for being a truly engaged reader. Perhaps if reading achievement had been measured in a different way, such as with a measure purely of reading comprehension or reading strategy use, a link between the cognitive and social would have been apparent. Another possibility is that the better readers in the present study connected with others through reading in ways not assessed here; for instance, perhaps they connected with people other than their parents and friends through reading (such as teachers and siblings) or connected with them in other ways (such as by being the source of book recommendations more than the recipient).

In addition to illustrating the various combinations of perceived reading support that children experience, the cluster analysis also provided insight into the question of whether support from different sources and of different types is additive in its relations with reading motivation and frequency. The present results suggest that there may be benefits to perceiving high support on a higher number of dimensions; for example, scoring highly on three or four perceived reading support dimensions (i.e., being in Clusters 1 or 5) was linked with greater reading motivation and frequency than scoring highly only on one dimension (i.e., being in Cluster 3). There was not, however, an explicit or neat pattern of additivity. For instance, Cluster 1, which scored highly on all four dimensions of perceived reading support, and Cluster 5, which scored highly on

three dimensions (all except books as presents), did not differ significantly in any aspect of reading motivation or frequency. Furthermore, Cluster 5 scored higher on web site reading than three other clusters and higher on story book reading than two other clusters, while Cluster 1 was no different than any other cluster on these two reading frequency variables. The finding that Cluster 5 reported particularly frequent web site reading compared to three other clusters makes sense, given that this cluster scored much more positively on the other media support dimension than any other cluster.

The analyses conducted to test Hypotheses 6 and 7 thus provided somewhat different answers to the question of whether perceived support is additive in its relations with reading motivation and frequency, in accord with Murdock and Miller's (2003) findings regarding general school support and motivation. That is, regression analyses suggested that children high in both parent support and friend support should be higher in two motivations (efficacy/challenge and knowledge goals/interest) than children high in just parent support or just friend support. Cluster analysis, however, indicated that children within a given cluster generally showed similar levels of perceived parent support and friend support, so the question of whether being high on both parent and friend support versus high only on one is beneficial to reading motivation appeared irrelevant to the present sample.

Unlike in Murdock and Miller's (2003) study, there was one way in which to look at whether a relatively high score on one dimension compensated for relatively low scores on others. Cluster 3 scored highly only on books as presents, and low to average on the other three dimensions of reading support; this cluster, however, scored higher than Cluster 2, which scored the most negatively on all dimensions, on only two of the

nine reading motivation and frequency variables examined. Thus, it seems that high scores on that one dimension compensated only in limited regards for low to average scores on other dimensions of perceived support.

Again, it is critical to emphasize, that the results of this cluster analysis, like all cluster analyses, are quite limited in generalizability (Hair et al., 2006). Different clusters would likely emerge in other samples. But one general point illustrated by this cluster analysis is that while some children experience low or high support on all dimensions of perceived reading support, others (for example, those in Clusters 3, 4, and 5) vary in their level of perceived reading support on different dimensions. Thus, for example, knowing the extent to which a group of children perceives that their parents encourage book reading and reading in general does not permit one to make an assumption about how much children in that group perceive support for reading other kinds of media. Furthermore, by identifying the reading support profiles of children in a given sample, cluster analysis could be quite useful as a first step in designing an intervention for improving the reading motivation of children in that sample.

Integration of Findings in the Context of Motivational Theories

SDT explicitly grounded two of the seven hypotheses tested in the present study. As described in the previous section, one of these hypotheses (Hypothesis 4) received substantial support, whereas the other (Hypothesis 5) did not. What do the findings pertinent to these hypotheses mean in terms of SDT? Furthermore, to what extent do SDT and previous research guided by it cohere with the tests of the other hypotheses in the current study? These questions are addressed in this section, in effort to integrate the main findings of this study within one theoretical framework from the field of motivation.

As EVT and research grounded by it also generally shaped the design and expected findings of this study, it is also given some consideration in this section.

At the broadest level, the significant correlations of perceived reading support with the reading motivation dimensions of efficacy/challenge, autonomy, and knowledge goals/interest obtained through the Hypothesis 4 analyses mesh with the SDT tenet that the social context one experiences with respect to a specific activity is linked to one's internalization of motivation for that activity (Grolnick et al., 1997; Ryan & Deci, 2000b). The correlations with efficacy/challenge and autonomy, and in particular the significant contributions of parent support to these motivations demonstrated in the test of Hypothesis 6, also align specifically with previous findings that school-related parent involvement is positively associated with both children's perceived competence (Grolnick et al., 1991; Grolnick & Slowiaczek, 1994) and perceived autonomy (Grolnick et al., 1991). Involvement, it should be noted, was the primary component of self-determination facilitating contexts that the RSS was intended to measure. However, it may not be the involvement per se that is linked to greater feelings of competence and autonomy, but rather it may be that those who are highly involved tend to act in the specific competence and autonomy supportive ways outlined in SDT (see Grolnick et al., 1997) during their involvement. As discussed in the section of this chapter on alternative ways of measuring reading support, the distinct contributions of these different social contextual features to reading motivation and their degree of interrelation could be examined in future work through observational and interview techniques that permit ratings of the degree to which children experience involvement, competence support, and autonomy support for their reading activities.

While efficacy/challenge and autonomy map directly onto human needs specified in SDT (Ryan & Deci, 2000a), knowledge goals/interest does not. As discussed in Chapter 2, however, in terms of SDT knowledge goals/interest represents a motivation in the internal portion of the self-determination continuum, as strong endorsement of the knowledge goals/interest items indicate a personal sense of the value and importance of reading. Therefore, the positive relation of knowledge goals/interest with perceived reading support adds to the evidence that the RSS tapped children's experience of a positive social context for recreational reading. Furthermore, it should be noted that parent and friend support together accounted for more than twice as much of the variance in knowledge goals/interest than they did in autonomy or efficacy/challenge (controlling for achievement, gender, and grade level), thus suggesting that experience of high involvement may especially be linked to individuals' valuing of recreational reading as a means of satisfying one's interests. It would be interesting to examine whether this same pattern of results held with respect to school reading.

In SDT, high involvement is considered especially important for fulfillment of the need for relatedness, the other basic human need specified in the theory in addition to competence and autonomy (Ryan & Deci, 2000a, 2000b). The findings of the current study relevant to Hypotheses 5 and 6 provided some support for this idea. As discussed earlier in this chapter, the positive relations of reading support with the motivation dimension of recognition were contrary to prediction (Hypothesis 5), but make sense when viewed as a measurement artifact or when the recognition scale is construed as measuring emotional support for reading. Another possibility, based on SDT, is that the recognition items were tapping children's perceptions of relatedness linked to reading;

parents, teachers, and friends likely would not offer a child recognition for his or her reading if they did not care both about the child and the child's reading. This view, contrary to the view of recognition as an extrinsic motivation, which led to prediction of a negative relationship between reading support and recognition, allows a positive relationship between reading support and recognition to be explained from the SDT perspective. That is, it suggests that high involvement should promote children's perceptions of relatedness to others through recreational reading, as it provides a ready opportunity for others to show, and thus for children to perceive, that others view them positively as readers. The finding that parent but not friend support contributed to variance in recognition (Hypothesis 6) suggests that this scenario might play out more in parent-child relationships than in friendships.

SDT may also be applied to the findings regarding the relations of perceived reading support with reading activity and achievement. Generally, based on the results of the regression analyses, it appeared that parent and friend support did not contribute as strongly or extensively to children's reading activity as to their motivation, which makes sense given that SDT emphasizes direct connections between the social context and motivation. While internal motivations may be linked with behavioral engagement more than external motivations, a basic tenet of SDT is that individuals engage in activities for a variety of reasons (i.e., external, introjected, identified, integrated, or intrinsic; Ryan & Deci, 2000a, 2000b). Thus, some individuals who are externally motivated and do not receive much support for recreational reading may actually read quite frequently in their free time; this might be particularly true for elementary school students who, more than other age groups, may receive rewards conditional on a certain amount of reading from a

variety of sources (e.g., their school, library programs, even their parents). Similarly, SDT does not specify direct relations between the social context and achievement (but rather research based on the theory suggests that motivation may mediate relations between supportive contexts and achievement, e.g., Grolnick & Slowiaczek, 1994). Accordingly, only one of 12 correlations calculated between reading support and achievement was significant in the present study, and, actually, it was negative; see Appendix G). Also, employing achievement as a control had little effect on correlations between support and motivation, and children with different profiles of support did not differ in their achievement.

Another way in which the results of the current study cohere with research based in SDT is in the relatively few gender or grade level differences apparent in children's reading support, motivation and activity, and the lack of significant differences in the correlations of reading support with motivation and activity for boys and girls. As stated by Grolnick et al. (2002), while there is some conflicting evidence about the role of gender in SDT research, on the whole, individual differences during development rather than broad gender differences seem to influence self-determination. Furthermore, Ryan and Deci (2000a) pointed out that while the array of values that may be internalized widens as children grow up and there is some evidence that motivation generally becomes more internal with age, individuals may internalize the same value or behavior at different ages dependent on personal experience, and they can shift to internalized motivation for a behavior from any other point on the self-determination continuum. On the other hand, there were many differences in the present study in the extent to which children reported that their mothers, fathers, and friends engaged in particular reading-

supportive behaviors. Current formulations of SDT do not offer an explanation for these differences, but the finding that children generally viewed their mothers as more involved than their fathers is in accord with other SDT-guided research (e.g., Grolnick & Ryan, 1989).

A major feature of the current study was comparison of how perceived reading support from parents and friends contributed to children's reading motivation and activity. As SDT and research grounded in it has focused primarily on individuals' interactions with authority figures, the present findings regarding the relative contributions of parent and friend support, if replicated in other domains and with other age groups, would suggest some distinctions that could be made in SDT itself. For example, with respect to motivation, the present study indicated that parent support and friend support both contributed significantly to the prediction of efficacy/challenge and knowledge goals/interest, but only parent support contributed to autonomy and recognition. As suggested in the earlier discussion of Hypothesis 6 findings, perhaps some motivations (e.g., autonomy and recognition) require conscious effort to support, whereas others may be supported either through conscious effort or through the natural or incidental interactions of everyday life (e.g., efficacy/challenge and knowledge goals/interest). Friends or other kinds of peers, especially in childhood, may not ordinarily act with the purposeful intention of internalizing motivation in each other, but parents and other authority figures might normally influence those under their supervision both through conscious effort and through less intentional means. Such an idea, if validated through other research, might be incorporated into SDT and lead to

differential predictions about the role of authority figures and peers in the internalization process.

Lastly with regard to SDT, another issue examined in the present study that is not addressed in the theory and has received little attention in research emanating from it is the dimensionality of involvement. While Grolnick and Slowiaczek (1994) forwarded a multidimensional model of parent involvement with the dimensions representing three different types of involvement, a single involvement dimension (and a single autonomy support dimension) emerged in Grolnick et al.'s (1991) factor analyses of items intended to measure involvement and autonomy support. In contrast, however, to the present study, in these two studies separate factor analyses appear to have been conducted on mother and father items, so the studies do not offer insight into the question of whether children's perceptions are organized by source as well as type of support. Thus, further examination of the structure of involvement is needed before any elaboration of the definition of involvement in SDT might take place.

In perhaps a more general manner, the findings of the present study also support EVT [Eccles (Parsons) et al., 1983; Wigfield & Eccles, 1992, 2002]. First, children's perceptions of their parents were clearly linked to their own feelings of motivation. In the EVT model (Wigfield & Eccles, 2002), perceptions of socializers are linked indirectly to children's expectations of success and subjective task value, through their goals and general self-schemata as well as their interpretation of experience and affective memories. So, while the current study indicates, in line with EVT, that children's support perceptions are related to motivations akin to expectations of success (efficacy/challenge) and task value (knowledge goals/interest), it does not present any evidence for or against

the indirect paths between these components in the model. The finding, though, that parent and friend support contributed somewhat more to the prediction of children's reading motivations than to their reading activity coheres with the model's depiction of activity choices as a step further away than expectations of success and task value from children's perceptions of socializers.

As detailed in Chapter 2, much research grounded in EVT has focused on gender-related issues, including whether parents differ in beliefs and behavior toward daughters and sons and whether boys and girls differ in motivation and activity engagement, and has indeed demonstrated some differences. The relatively limited differences found in girls' and boys' perceived reading support, motivation, and activity in the current study are thus somewhat surprising based on past EVT-based research. One specific finding that is particularly interesting to consider in the context of previous research is the lack of difference in girls' and boys' levels of parent general/book support. On the one hand, it coheres with findings that parents of girls and parents of boys rate the importance of reading/language arts for their children similarly (Eccles, 1993). On the other, it conflicts with other research based in EVT in which parents indicated that they encourage girls to read more than boys (Harold et al., 1991 as cited in Eccles, 1993). These disparate findings might mean that in the nearly two decades since Harold et al.'s (1991) and Eccles's (1993) findings were reported, parents' behaviors have caught up with their beliefs about the equal importance of reading for boys and girls.

Finally, EVT, like SDT, does not make specific predictions regarding the role of different types of socializers, and most research directly tied to the theory has focused on the actual and perceived beliefs and behaviors of parents and teachers, as opposed to

those of peers. Thus, the present findings regarding the differential contributions of perceived reading support from parents and friends do not represent support, or the lack thereof, for EVT.

The Reading Support Survey: Reliability and Validity

Overview

This dissertation involved the creation and refinement of a new self-report measure for learning about children's experiences of reading support, the Reading Support Survey (RSS). Although investigation of the psychometric properties of this measure was not the primary purpose of this study, it does offer a number of insights regarding the reliability and validity of the RSS for assessing children's perceived reading support. In addition, it points to a number of ways that the RSS might be further refined for future research and analyses needed to more fully investigate its psychometric properties.

Reliability

The analysis conducted to test Hypothesis 1, regarding the dimensions of perceived reading support concluded with the organization of the main items of the RSS into four scales. These scales had Cronbach's alpha values ranging from .79 to .84, indicating relatively strong internal consistency reliability. The item-total correlations associated with each scale, which ranged from .35 to .73, also offered evidence that each scale measured a singular construct, if .30 is taken as the minimal acceptable value for these correlations (Garson, n.d.). Hair et al. (2006), however, asserted that an item which correlates less than .50 with the rest of the items in its scale should possibly be eliminated.

In addition to examining internal consistency reliability, future examination of the psychometric properties of the RSS should investigate its test-retest reliability. It would especially be important to know about the stability of children's responses to the RSS before employing it as a pre- and post-intervention measure so that any changes in scores could be related to the intervention, and not measurement instability.

Convergent and Discriminant Validity

In addition to reliability, it is critical that new measures demonstrate both convergent and discriminant validity, or, respectively, high agreement with measures of the same conceptual variable and low agreement with measures of other conceptual variables (Stangor, 2004). In the present study, convergent validity was demonstrated through the parallel findings of the paired sample comparisons conducted to test Hypothesis 2 and of the analysis of children's responses to the question about who most influences their recreational reading. That is, children both rated their mothers higher than their fathers and friends on most of the behavioral and affect items of the RSS, and most often selected their mother as the person who is the greatest influence on their recreational reading. And complementing the fewer significant paired comparisons for fathers and friends (although what differences there were favored fathers), children selected their fathers and friends about equally as the greatest influence on their reading.

Relevant to the issue of convergent validity, it should be noted that the RSS is said to measure children's *perceived* reading support, rather than simply reading support, in part because there is no available evidence that the survey measures children's actual frequency of reading-related interactions with their mothers, fathers, and friends. As discussed later in this chapter, alternative methods of measuring reading support would

be needed to claim that children's responses on the RSS represent their actual experiences of reading support, that is, would provide convergent validity for the RSS as a measure of (actual) reading support. As a self-report measure of children's perceptions, however, the RSS may be considered inherently valid, if it is assumed that children were responding honestly to the survey items. Given that the RSS directions stressed the importance of honesty and the fact that responses would not be seen by parents or teachers, this seems a reasonable assumption to make. This assumption is also based on the fact that while completing the survey a number of children commented that they were struggling with the items about parents' and friends' reading habits because they could not honestly or accurately answer them (plus, these were among the most frequently skipped items on the survey). In addition, the pattern of individual item means (see Table 3) suggests that children were responding carefully and thoughtfully to the RSS items. For instance, it makes intuitive sense that by fourth- and fifth-grade children would be reading aloud with their parents a bit less frequently than receiving general encouragement from them to read.

With respect to discriminant validity, one observation is that in the present study scores on each perceived support dimension correlated weakly to moderately with children's ratings of their own reading habits. In other words, children distinguished the reading-related behaviors of others and themselves. If there were very strong correlations between children's ratings of their own behavior and that of others, it might mean that children were making assumptions about the normal frequency of behaviors based on their own frequency of closely related behaviors, rather than on their reflections about others' behaviors. Correlations between the perceived reading support dimensions also

constitute evidence of discriminant validity. That is, the correlations obtained between the dimensions of reading support (see Appendix G) were moderate, which suggests that the dimensions of perceived support represented distinct, although somewhat related, aspects of support.

Additional Validity Issues

One broad issue regarding the validity of the RSS is the extent to which it is suited for use with different populations of children. As indicated in the discussion of Hypothesis 1, it is uncertain how generalizable of the factor analysis results are to the general population of upper elementary school students, given that the sample employed in the present study was quite homogenous in ethnicity and SES and limited to children attending school in a rural area. Plus, the dimensions of perceived reading support that emerged were different from those obtained in the pilot study, in which the sample was drawn from an ethnically diverse, suburban school. Furthermore, in both the dissertation and pilot studies, children who did not live with at least one male and one female parent, step-parent, or other caretaker were excluded from the final sample. Thus, further examination of the RSS factor structure, using samples more diverse in ethnicity, SES locale, and family structure and employing both exploratory and confirmatory factor analyses, is needed before scales derived from the measure could be recommended for broad use.

The issue of family structure is especially interesting. Inclusion of children whose mothers and fathers do not live together might lead to the emergence of separate mother and father factors, as presumably, parents who live apart are less unified in their behaviors and encouragement of particular activities than those that live together. There

is also the question of how to include children who know only one of their parents or live with parents of the same gender. Instead of directing children to answer the RSS items with respect to their mothers and fathers, children could be directed to identify and then respond with regard to their primary and secondary caretakers. Thus, children who know only one parent could respond with regard to their parent and perhaps a grandparent, cousin or baby-sitter, and children of same-gender parents could respond separately with regard to each one.

Another broad validity question regarding the RSS is whether selection of responses at the higher ends of the rating scales actually represents positive support for reading. For example, children who indicate that their mothers encourage them to read everyday may perceive this encouragement as nagging or coercion. Ideal outcomes – a variety of positive motivations for reading and frequent engagement in reading a variety of materials by choice – might be associated with perceiving moderate amounts of reading support. Stronger relations of perceived reading support with reading motivation and frequency might be observed if statistical methods that could identify curvilinear relations between these variables were employed (see Eccles, 1993). In addition, the RSS might ask children to rate how important each theoretically reading-supportive behavior is to them, akin to how Malecki and Demaray (2003) included items asking about the importance of different kinds of support on the CASSS, their survey of children's perceived support in their lives in general. The affect or enjoyment items on the RSS served a related purpose; they were included to offer preliminary insight into how positively children view the reading interactions they have, but even though children may enjoy reading interactions, it does not automatically mean that those interactions have

benefits beyond immediate enjoyment. Furthermore, because responding to these items was conditional on indicating that the interaction occurred at least “rarely” and they were included only as a subpart of three of the RSS frequency items, they could only be employed in limited analyses. Other issues related to the role of affect in reading interactions are discussed in a later section which addresses broader conceptual issues.

Specific Refinements to the RSS

Lastly, my experiences while collecting data with the RSS and the results of the current study suggest a few potential refinements for RSS items and directions. For example, instead of or in addition to asking children about how many books they received as presents in the past year from each socialization agent, the RSS could ask children to rate how frequently they borrow books and other reading materials from each person. This item would tap the same broad construct as receiving books as presents (provision of reading materials), but would be preferable because children’s ratings of friends on this item would likely be higher and show more variation than they did on *gives books as presents*. Plus, this item could use the same response scale as the majority of the RSS frequency items (*Never to Everyday*); using a unique response scale for the books as presents items possibly led to the emergence of a dimension including only these items. Another item that would likely benefit from re-wording is “How do each of these people act when they see or hear about you reading in your free time?” A number of children found it difficult to select responses for this item, especially for friends and fathers, because none of the response options reflected indifference to or unawareness of children’s reading. Regarding the RSS directions, one issue is that they currently do not require children to indicate exactly who they are thinking about as their “mother or main

female caretaker” and “father or main male caretaker.” Having children indicate, for instance, whether they are thinking about their mother, step-mother, or grandmother would enable more precise description of the sample, and inform considerations of which participants to include and exclude in particular analyses.

Limitations and Future Directions

Overview

The discussion thus far in this chapter has touched on some of the limitations of the current study, and directions for future research suggested by those limitations. This section elaborates on many of these points and describes other issues warranting further investigation, in four subsections. The first subsection concerns developmental issues related to studying reading support and its interplay with reading motivation and achievement, whereas the second subsection concerns the need to study levels of reading support in more diverse populations. The next two subsections take a broader view of reading support; one subsection delineates extensions for research related to but beyond the focus of the current study and the other considers alternative methods for the study of reading support.

Developmental Considerations

This study focused on children in the fourth- and fifth-grades because previous research focused on this age group’s experience of social interaction in recreational reading is sparse, especially compared to the amount of research that has focused on younger children’s reading-related interactions. While general comparisons can be drawn between the results of this study and research that has focused on social aspects of other age groups’ reading, inclusion of children at multiple levels of schooling within a single

study would allow more specific comparisons to be made. In the present study, few grade-related differences in perceived reading support, motivation, and frequency were found; with samples including wider age ranges, more extensive differences would be expected. An important empirical question, then, would be whether the extent or nature of relations of reading support with reading motivation and frequency would vary across age groups.

Cross-sectional designs would provide insight into the issues of developmental differences in perceived reading support and its relations with other variables, but longitudinal studies would be especially helpful. Studies that follow children over a number of years would particularly shed light on such questions as whether experiences of support for and interaction with others in middle childhood has added benefits beyond only having such experiences in early childhood, and whether the experience of reading support in middle childhood or adolescence can compensate for lack of such support at younger ages. Duchein and Mealey's (1993) retrospective study in which college students reflected on their experiences of social support for reading throughout their lives suggested that sustained reading support across many years is important, but a longitudinal study would be able to demonstrate whether this was indeed the case. Longitudinal studies would also provide a stronger basis for addressing issues of how and to what extent reading support is causally connected to reading motivation, engagement, and achievement.

In addition, longitudinal studies that focused on support from different sources would offer insight into whether the importance of different sources and types of support changes over time. For instance, the present study suggested that parent support was

more connected to children's reading motivation than friend support. It would be particularly interesting to compare the contributions of parent and friend support to reading motivation for elementary and middle school students, given that children's perceptions of parent involvement in their lives in general tend to decrease at the entry to middle school with negative consequences for motivation (Wigfield et al., 2006) and, furthermore, that Smith and Wilhelm's (2002) mixed method study suggested that seventh- to twelfth-grade boys enjoyed and valued interactions with friends in reading more than those with adults.

Reading Support in Diverse Populations

As discussed in the sections concerning Hypothesis 1 and the reliability and validity of the RSS, the sample employed in the current study was quite homogenous in background characteristics. Thus, the importance of further analysis of the factor structure in more diverse populations was emphasized. It is equally important to emphasize that the levels of support experienced and the relations of perceived reading support with reading motivation and frequency might also vary in other samples. In particular, children from low-SES backgrounds would likely score lower on and show less variation in their experiences of reading support, given that the RSS largely taps instrumental support. Specifically, for example, in low-SES communities, parents may generally have less time to devote to shared reading activities, be less likely to give books to their children, and be less likely to have internet access at home and therefore act in ways that promote web site reading. With less variation in reading support, there would be less likelihood of observing relations with reading motivation and activity. Ideally,

future research might examine reading support in a large sample varied in background characteristics, as well as in homogenous subsamples.

Reading Support: Research Extensions

The current study was designed to focus on older children's perceptions of reading support, primarily of the instrumental type, for recreational reading, and their relations with reading motivation and habits. The results of this study, especially when considered jointly with gaps in current understanding of older children's social interactions that this study did not endeavor to address, suggest a number of broad directions for future research on reading support. For example, the role of affect in older children's reading interactions merits further investigation. This seems to be a logical next step for future study as its importance for young children has been identified (Baker et al., 1997), and as the current study and other research clearly show that many older children and adolescents interact with others in reading in a variety of ways, but have not focused on the affective characteristics of those interactions. Specifically, the consideration of affect in this study was limited to children's feelings about discussing reading and reading aloud with others, and receiving books as presents. Children's feelings about other forms of reading support, such as other's involvement in their selection of reading materials, may be important, and the affect of the person in the role of supporter should be considered as well. Furthermore, the present study did not examine the relation of affect to the behavioral aspects of support, or to reading motivation and habits. Specifically, a future study might examine whether affect adds above and beyond the behavioral aspects to the prediction of children's reading motivations.

Future research focused on the relation of reading achievement and skills to older children's experience of reading support is also needed. Reading achievement was briefly mentioned in the previous section on developmental considerations. In addition to investigating generally how reading achievement relates to reading support and motivation over time, future studies might investigate whether reading support plays different roles for children with low, average, and advanced reading skills for their grade level. Perhaps, for instance, reading support is most closely linked to poor readers' reading motivations and achievement, and growth in these areas. Future studies might also explore whether there are gender differences in any identified relations between reading support and achievement.

In addition, future research might examine both positive and negative aspects of the social dimension of reading. The present study focused solely on the positive, that is, behaviors that represent encouragement and valuing of reading and how they contribute to motivations to read, as opposed to behaviors that promote active avoidance and devaluing of reading. Currently, reasons that children have for avoiding reading are receiving increased attention (Guthrie & Coddington, in press), so research on how socialization agents contribute to reading avoidance and resistance would contribute to this growing area of theory and research. As described in Chapter 2, three general ways that parents discourage reading were identified by Wells (1978), based on fifth-graders responses to an open-ended question about how others impact their reading: over-emphasizing reading, using reading as punishment or punishing children for doing poorly in reading, and disregarding children's interests and needs related to reading. Researchers could build on this work by identifying additional ways that parents, and others,

discourage reading and examining the links of such behaviors with various reading motivations. In addition to focusing on how others' actions and words promote reading avoidance, future research might include examination of what behaviors of socialization agents are connected to amotivation for reading, with amotivation defined as in SDT, (Ryan & Deci, 2000a).

Another very broad issue for future study is the importance of reading support relative to other factors that influence children's recreational reading habits, such as their reading ability and personal interests. In both Baker and Wigfield's (1999) and Wigfield and Guthrie's (1997) studies, social interaction in reading had the tenth lowest mean of 11 dimensions of reading motivation. But it is important to keep in mind that in the current study as well as the two studies just cited, the items used to measure social interaction and support partly or entirely tapped how much children actually have these experiences; how they view social interaction in reading, whether they experience it or not, might be a better indicator of its motivational potential. Furthermore, based on their mixed method study, Smith & Wilhelm (2002) asserted that for adolescent boys, social interaction in reading is quite common, and the ways in which reading fosters social interaction (e.g., reading a series of science fiction books recommended by a friend provides a basis for conversation) is a major motivator of recreational reading.

Three other possible research extensions from the present study warrant brief mention. First, given that the study focused solely on recreational reading, one important question is the extent to which support for recreational and school reading consist of the same and different behaviors. For example, do parents use different strategies to encourage recreational and school reading, and do they tend to have more impact in one

of these areas? Second, future research might examine reading support from people other than mothers, fathers, and friends. This extension is based on the finding that in answer to the final RSS item, which asked children to choose the greatest influence on their reading, more than 25% of children (out of the 80% who agreed that others influence their reading) selected someone other than their mother, father, or one of their friends. Support from teachers (chosen 17% of the time) would particularly be apt for future study; one question is to what extent do children view them as an influence because they require them to read in their “free” time, versus because they engage in the same types of supportive behaviors as parents and friends? And in ethnic groups where household membership is larger and more varied, it would be interesting to investigate support from other family members. Lastly, in line with research in other domains guided by EVT and other theories [e.g., Bouchey & Harter, 2005; Eccles (Parsons) et al., 1983], future research might investigate children’s perceptions of others’ beliefs about the importance of recreational reading and of the children’s competence as readers, rather than or in addition to focusing on children’s perceptions of instrumental support for their reading.

Reading Support: Alternative Methods

The present study relied on children’s completion of surveys concerning their experiences of reading support. As contended by Bouchey and Harter (2005) and others, children’s perceptions of support, as compared to others’ accounts of the support they provide, are likely more closely linked to children’s motivations and behaviors. Nevertheless, it would be beneficial to compare children’s reports of the support they experience for reading with others’ reports of their own behavior. Using self and non-self informants within a single study might offer insight into the extent to which social

desirability and response habits are affecting analyses. In addition, comparison of children's and others' reports could help researchers, particularly those interested in planning interventions to improve reading motivation and engagement, discern whether children low in positive motivations for reading are not perceiving the support that others say they are offering, recognize the proffered support but are resistant to it, or are truly not receiving much support for their reading. Another way to address concerns about the accuracy of self- and other-reports on surveys would be to ask participants to record their experiences of reading-related social interactions in diaries. Also, especially in the examination of affect around reading interactions, observational methods could be employed. Observations have been employed in the study of younger children's interactions with parents during shared reading (see Baker et al., 1997); for older children, the observations might center around discussions of books and other reading materials.

A second methodological limitation of the present study that may be addressed through a different methodological approach is that the use of survey measures and correlational analyses precluded insight into why reading support and reading motivation were associated. Even if all correlations between reading support and motivation were as predicted (they were not), this would not comprise sufficient evidence that processes in accord with SDT explained their occurrence. To better ascertain whether dimensions of reading support and motivation are correlated for reasons in accord with SDT, researchers might record reading-related interactions between children and their parents and friends, and then rate the recordings for evidence of autonomy support, structure and

competence support, and involvement. They might also interview the participants about their intentions and feelings at particular points in the interaction.

Finally, to further investigate the relative effects of support from different socialization agents, experimental methods might be employed. For example, children might be presented scenarios in which an individual recommends books to them. Across groups of children, the individual making the book recommendations would vary in identity (e.g., parent, friend, teacher), but the recommended books would remain constant. After hearing the scenario, children would be asked how likely they would be to act on the book recommendations. Thus, experiments could provide alternative ways of distinguishing whether and if so, how, source of support affects children's reading activity.

Consideration of the results and limitations of the present study suggested a number of directions for future research on reading support, particularly as experienced by older children. In a sense, the main contribution of this study is a portrait of a particular group of fourth- and fifth-grade boys' and girls' perceptions of the extent to which their mothers, fathers, and friends are involved in and encourage their recreational reading, and of how these perceptions relate to their reading motivations and habits. This dissertation also contributed a new measure of social aspects of children's reading. Hopefully, with further refinement, the RSS could be a useful tool for researchers and educators who want to know about children's experiences of reading support. Furthermore, they might use the RSS and information about the relations of reading support, motivation and activity provided by this and other studies to discern whether

increased reading support from a particular source or of a particular type might strengthen children's reading engagement.

Appendix A

Pilot Study

In a preliminary fashion, the pilot study examined a number of issues that the dissertation study addressed, including (1) the factor structure of perceived reading support, (2) the psychometric properties of the instrument used to measure perceived reading support, (3) whether there are overall differences in children's amount of perceived reading support from different socialization agents, (4) whether there are there gender differences in perceived reading support, (5) how children's perceived reading support relates to dimensions of their reading motivation and their reading frequency, and (6) whether children may be grouped on the basis of their pattern of scores on different dimensions of perceived reading support, and whether such groups or clusters of children differ predictably in their reading motivation and frequency. The pilot study, however, differed from the dissertation study in three main ways. First, the pilot study explored whether there were ethnic differences in perceived support, given that the sample obtained for the pilot happened, unintentionally, to be quite ethnically diverse. Second, due to the pilot study's small sample size, the correlations between perceived support, reading motivation, and reading frequency for boys and girls were not compared statistically and multiple regression analyses were not employed. Lastly, in the pilot study, seven reading motivation dimensions were examined, whereas dimensions examined in the dissertation study were limited based on theory, pilot study findings, and constraints in survey administration time.

Method

Participants

Students in three fifth-grade classrooms in one school in Frederick, MD completed the preliminary RSS (P-RSS) in December 2005. The students in these classrooms were a subsample of those participating in a study of the impact of Concept-Oriented Reading Instruction (CORI) on reading comprehension and motivation. In total, 55 fifth-graders (29 boys, 26 girls) completed the P-RSS. Forty-nine percent of the students were European-American, 24% were African-American, 20% were Hispanic-American, 2% were Asian-American, and 5% were of other ethnic backgrounds. Given this ethnic diversity, the variable *ethnic status* was created to reflect whether students were from the majority (European-American) or minority (any other) ethnic group.

Measures and Procedure

The students completed the eight 3-part items of the P-RSS (the development of which was detailed in Chapter 3) as the fourth item in a battery of eight assessments they were completing for the study of CORI. Classroom teachers read aloud the directions and items of the P-RSS while their students followed along silently. I assisted with and observed its administration in one classroom, while other graduate research assistants assisted with and provided feedback to me on its administration in the two other classrooms. The administration time ranged from 25-35 minutes.

At the end of the P-RSS, students responded to three items about their frequency of reading in their free time. These items, which asked about book, magazine, and web site reading, used the same five response items as the majority of the P-RSS items. In analyses, each item was examined individually.

The analyses utilized data from two measures of reading motivation that the students completed as part of the larger study. Since the pilot study was intended to be exploratory, all motivation data available from the larger study of CORI was employed.

The first motivation measure was the Perceptions of Reading Motivations Questionnaire (PRMQ), which as described further in Chapter 3, taps the motivations of autonomy (4 items), efficacy/challenge (7 items), and knowledge goals/interest (9 items). Teachers read the items aloud while students followed along, selecting one of four response options for each item. This measure was second in the larger battery of assessments given to students, and was completed on the same day as the P-RSS. In contrast to the dissertation study, the pilot study employed the original directions (which direct students to focus on school reading), and no items were deleted or added. Students completed the measure in 15-20 minutes. Cronbach's α reliabilities for the pilot sample were .70 for autonomy, .85 for efficacy/challenge, and .83 for knowledge goals/interest. Scores were generated as in the dissertation study, by reverse-coding all negative items and then summing responses for each scale.

The other motivation measure was the Group Reading Motivations Questionnaire (GRMQ), which was created by John Guthrie and Cassandra Coddington for use in the 2005 CORI assessment battery. The GRMQ consists of a reading self-efficacy scale that is divided into two subscales, competence and difficulty, and a reading-orientation scale that is divided into the two subscales of enthusiasm and avoidance. These subscales were created because having low scores on "positive" constructs (like competence and enthusiasm) may not be conceptually equivalent to having high scores on the opposite constructs (like difficulty and avoidance). For instance, a child might have a low score on

the enthusiasm construct because they are indifferent to reading, but that child might not actively avoid reading, and thus might have a moderate or even low score as well on the avoidance subscale. Each of the four subscales of the GRMQ consists of seven items, and each item has four response options. The items are contained in Table A1. The GRMQ was administered by graduate research assistants to groups of up to five students at a time in quiet settings outside the classroom (e.g., the school library). This type of administration was chosen to encourage students to respond more honestly and thoughtfully than they do on measures administered to the whole class at once (like the MRQ or PRMQ). Also, with the GRMQ, the pace of administration could be varied in accord with the students' reading levels. The GRMQ was the seventh measure in the assessment battery, and was given 1-2 days following the P-RSS and PRMQ. Its administration time ranged from 15-25 minutes. GRMQ reliabilities (Cronbach's α) were .64 for competence, .78 for difficulty, .85 for enthusiasm and .81 for avoidance. Scores for each scale of the PRMQ and GRMQ were formed by reverse-coding the negative items. Then responses to the items comprising each scale were summed.

Lastly, one analysis utilized students' scores on the Gates-MacGinitie reading comprehension test (MacGinitie, MacGinitie, Maria, & Dreyer, 2000). This was the first measure in the assessment battery. All students completed Form T, but students completed level 4, 5, or 6, depending on whether they were reading below, on, or above grade level, respectively. Reading level was based on teacher judgments and students' performance on Form S of the test in September of the same school year. Administration time for the test, including instructions, was 45 minutes. Extended scale scores were used in the analyses.

Table A1

Items on the Group Reading Motivations Questionnaire (GRMQ)

Reading self-efficacy	
Competence subscale	Difficulty subscale
Do you need extra help in reading?*	Are you a good reader?*
Can you sound out long words?	Can you figure out hard words when reading?*
Do you learn more from reading than most students in the class?	Is it hard for you to understand stories you read in class?
Can you recognize words easily when you read?	Do you make lots of mistakes in reading?
Do you think you will do well in reading next year?	Are the books you read in class too difficult?
Are you good at remembering words?	Do you feel others are smarter than you in reading?
Do hard words in a story stop you from reading?*	Is reading to the class a challenge for you?
Reading orientation	
Enthusiasm subscale	Avoidance subscale
Do you enjoy reading books in your free time?	Do you guess a lot when reading so you can finish quickly?
Do you like to read new books?	Do you read easier books so you don't have to work as much?
Is reading boring to you?*	How often do you try to find a good book?*
Do you enjoy the challenge of reading a book?	How often do you think, "I don't want to read this."?
Do you enjoy reading interesting books even if they are hard?	Do you try to get out of reading books for school?
Do you enjoy reading books for a long period of time?	Do you wish you didn't have to read for school?
Do you like it when books make you think?	Do you read as little as possible?

Note. * indicates items that were reverse-coded.

Results

P-RSS Factor Structure

Choice of factor analytic method. Since a goal of the pilot study was to investigate whether there were a set of latent constructs underlying the items on the P-RSS, exploratory factor analysis (EFA) was employed, as in the dissertation study and in line with Pett et al. (2003). EFA was appropriate rather than principal components analysis (PCA) because PCA does not permit modeling of the structure of correlations among a set of variables. In addition, EFA was used rather than confirmatory factor analysis (CFA) because CFA should only be used when there is a strong theoretical or empirical base to devise models *a priori* for testing (Fabrigar et al., 1999; Pett et al., 2003). Although I was primarily interested in whether three factors would form, each one representing reading support from a different socialization agent, such a model has neither been tested nor theorized by others.

Sample size requirements. Clearly, the ratio of participants (55) to items (24) in this pilot study did not meet either Gorsuch's (1983) recommendation of at least five participants per variable or Nunnally's (1978) recommendation of at least ten. In fact, the number of participants was only slightly above the minimum requirement of 50 given for factor analysis by Hair et al. (2006). Given, though, that even with a relatively small sample size, a factor may be reliable if several variables load on it strongly (Pett et al., 2003), the sample size is considered again once the factor analysis results are presented.

Preparatory steps for factor analysis. Examination of the data set for missing values revealed that five children skipped all items pertaining to fathers, presumably because they followed the directions to omit these items if they did not live with their

fathers. There was also some missing data for the items pertaining to mothers and best friends, but these omissions appeared to be random. That is, no children omitted all the items pertaining to these socialization agents. Given that the sample size was near the minimum required (Hair et al., 2006), the issue of missing data was handled by excluding cases pairwise rather than listwise, so that there would be the maximum number of respondents to each item included in the analyses.

Boxplots were created for each variable in order to ascertain whether there were any outliers in the data set. Although the use of Likert-like scales make the presence of outliers unlikely because it limits the potential for extreme responses, several variables had skewed distributions (as will be discussed further shortly), so it was important to determine whether there were any participants whose responses fell in the tails of the distributions for numerous variables. Fortunately, examination of the boxplots suggested that this was not the case. The maximum number of outlier responses identified by the boxplots for a participant was three. In addition, one participant was an outlier on two variables, and six students were outliers on one variable. As suggested by Hair et al. (2006), Mahalanobis distance values were also obtained to assess whether there were any multivariate outliers (Hair et al., 2006); these values supported the conclusion that outliers need not be of concern.

Next, P-RSS data was considered with regard to statistical assumptions of factor analysis. First, as the P-RSS employed Likert-like scales, which may be considered essentially interval-level, the assumption of interval-level measurement was satisfied. Regarding the assumption of multivariate normality, although some suggest that this and other statistical assumptions are not critical for PAF (Garson, n.d.; Hair et al., 2006), lack

of normality can affect linearity, which is another assumption of factor analysis, and reduce correlations between variables (Hair et al., 2006). Therefore, since the correlation matrix provides the basis of factor analysis, the skewness and kurtosis statistics for the 24 main items (8 types of reading support x 3 socialization agents) comprising the P-RSS were obtained and inspected. This inspection revealed that nine variables had skewness values larger than +/-2, a value that indicates substantial skew (Garson, n.d.). Two of these nine variables also had substantial kurtosis values, likewise based on the criterion that values larger than +/-2 are significant (Garson, n.d.). I ultimately decided to transform each of these nine variables by adding one to each respondent's original response, and then taking the square root of this value. Even with this transformation, three variables did not achieve normal distributions according to Garson's criteria: *best friend give books as presents*, *mother says to stop reading*, and *father says to stop reading*. Table A2 shows the skewness and kurtosis values of these nine variables before and after transformation.

The tests of correlation matrix factorability and the factor analyses described below were actually conducted twice, once using the transformed variables and once using the original, nontransformed variables. As described below, these tests and analyses produced results that were highly similar. For example, the individual Measures of Sampling Adequacy (MSAs) dictated the elimination of the same variables in the same order. Also, the same items loaded on the same factors, with small variations in the factor loadings. Therefore, since transformations make analyses more difficult to interpret, the results obtained when the nontransformed variables were employed are reported, and the

nontransformed values were used in all analyses that involved scales formed on the basis of the factor analysis.

Table A2

Skewness and Kurtosis Values of the Nine Non-normally Distributed Values Before and After Transformation

Item	Skewness		Kurtosis	
	Before transformation	After transformation	Before transformation	After transformation
Mother says to stop reading	3.89	3.05	-1.12	-0.63
Father reads with child	2.21	1.27	-0.65	-1.65
Father gives books as presents	3.36	1.68	2.71	-0.09
Father says to stop reading	3.24	2.57	0.01	-1.03
Best friend encourages reading	2.53	1.75	-0.73	-1.77
Best friend reads with child	2.21	1.20	-0.39	-1.68
Best friend gives books as Presents	5.38	4.87	3.63	1.91
Best friend plays word games/puzzles with child	2.06	0.99	-0.75	-1.76
Best friend says to stop reading	2.70	1.54	0.32	-1.34

Evidence of correlation matrix factorability. Table A3 presents the correlation matrix for the 24 items comprising the P-RSS. Bartlett's test of sphericity (Bartlett, 1950) produced a Chi square value of 618.25 ($p < .000$, 276 df), which enabled rejection of the null hypothesis that the correlation matrix is an identity matrix, and thus, that factor analysis could proceed, since the number of factors obtained would be less than the number of variables inputted. However, the Kaiser-Meyer-Olkin (KMO) test produced a value of .66, which is "mediocre" according to criteria developed by Kaiser (1974), indicating that the sample size was not sufficient relative to the number of variables in the analysis (.70 is the minimum value needed for factor analysis to proceed). Furthermore, seven of the 24 individual Measures of Sampling Adequacy (MSAs) were below Kaiser's minimal criterion of .60. Thus, following the recommendation of Pett et al. (2003), all variables with MSAs below .60 were eliminated one by one, starting with the variable with the lowest MSA, until all variables had MSAs of at least .60. This procedure resulted in the elimination of three variables: *best friend reads in free time* (which had the lowest MSA value initially, of .43), *father reads in free time*, and *best friend says to stop reading*. As each of these variables were eliminated, the KMO value increased gradually, ultimately to the acceptable value of .75 (Notably, the exact same KMO value was obtained when the transformed variables were used).

Table A3

Correlation Matrix for the 24 Items Comprising the P-RSS

	1	2	3	4	5	6	7	8
Mother...								
1. Helps pick items	—							
2. Encourages reading	.50**	—						
3. Reads with child	.57**	.40**	—					
4. Talks about reading	.41**	.32*	.52**	—				
5. Reads in free time	.37**	.44**	.34*	.13	—			
6. Gives books as presents	.36**	.37**	.27*	.39**	.29*	—		
7. Plays word games/puzzles	.32*	.19	.27*	.32*	.08	.25	—	
8. Says to stop reading	.41**	-.04	.34*	.28*	-.20	.19	.43**	—
Father...								
9. Helps pick items	.59**	.23	.42**	.38**	.26	.21	.17	.31*
10. Encourages reading	.34*	.40**	.41**	.46**	.15	.30*	.23	.30*
11. Reads with child	.31*	.25	.44**	.37**	.06	.11	.34*	.36**
12. Talks about reading	.09	.01	.11	.57**	-.10	.14	.19	.31*
13. Reads in free time	.11	.20	-.06	.12	.31*	.42**	-.05	-.06
14. Gives books as presents	.29*	.27	.17	.17	.16	.48***	.41**	.31*
15. Plays word games/puzzles	.22	.06	.29*	.25	.12	.18	.58***	.46**
16. Says to stop reading	.37**	.01	.30*	.07	-.01	.25	.26	.69***
Best friend...								
17. Helps pick items	.38**	.24	.35*	.53***	.20	.22	.10	.29*
18. Encourages reading	.48***	.28*	.31*	.45**	.19	.31*	.31*	.43**
19. Reads with child	.34*	.26	.18	.40**	-.15	.22	.29*	.42**
20. Talks about reading	.22	.32*	.04	.38**	.01	.07	.30*	.26
21. Reads in free time	.11	.23	.06	.12	.20	.28*	.16	.03
22. Gives books as presents	.31*	.11	.22	.41**	.05	.44**	.28*	.15
23. Plays word games/puzzles	.31*	.06	.30*	.37**	.05	.33*	.50***	.50***
24. Says to stop reading	.29*	.25	.28*	.07	.12	.29*	.12	.14

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table A3, continued

Correlation Matrix for the 24 Items Comprising the P-RSS

	9	10	11	12	13	14	15	16
Father...								
9. Helps pick items	—							
10. Encourages reading	.45**	—						
11. Reads with child	.58**	.62**	—					
12. Talks about reading	.38**	.56**	.46**	—				
13. Reads in free time	.20	.14	.16	.23	—			
14. Gives books as presents	.40**	.34*	.53***	.29*	.34*	—		
15. Plays word games/puzzles	.19	.44**	.38**	.29*	.09	.18	—	
16. Says to stop reading	.33*	.13	.27	.07	.14	.46**	.29*	—
Best friend...								
17. Helps pick items	.29*	.13	.16	.24	-.02	.08	.03	.32*
18. Encourages reading	.34*	.28	.32*	.32*	.15	.37*	.27	.46**
19. Reads with child	.38**	.30*	.41**	.37**	.10	.33*	.08	.35*
20. Talks about reading	.31*	.19	.43**	.36*	.25	.32*	.14	.37**
21. Reads in free time	.10	.26	.24	.07	.29*	.27	.14	.39**
22. Gives books as presents	.19	.10	.20	.24	.05	.22	.02	.16
23. Plays word games/puzzles	.20	.18	.17	.16	-.12	.36*	.43**	.39**
24. Says to stop reading	.25	-.03	-.03	-.17	.02	.16	-.05	.17

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table A3, continued

Correlation Matrix for the 24 Items Comprising the P-RSS

	17	18	19	20	21	22	23	24
Father...								
9. Helps pick items								
10. Encourages reading								
11. Reads with child								
12. Talks about reading								
13. Reads in free time								
14. Gives books as presents								
15. Plays word games/puzzles								
16. Says to stop reading								
Best friend...								
17. Helps pick items	—							
18. Encourages reading	.74***	—						
19. Reads with child	.56***	.58***	—					
20. Talks about reading	.50***	.64***	.58***	—				
21. Reads in free time	.17	.45**	.28*	.38**	—			
22. Gives books as presents	.39**	.39**	.43**	.26	.18	—		
23. Plays word games/puzzles	.32*	.39**	.27	.16	.18	.30*	—	
24. Says to stop reading	.15	.07	.01	-.02	-.27*	.03	.21	—

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Process of deciding how many factors to extract. As recommended by Pett et al. (2003), before running the PAF analysis, PCA was used to determine how many factors to extract; this procedure, unlike PAF, permits as many components to be extracted as there are variables. Visual inspection of the scree plot (Figure A1) produced by this analysis suggested that it would be appropriate to extract either one or four factors, given that there were distinct changes in the slope of the plotted line at components 2 and 5; the

points to the left of these breaks should represent meaningful factors (Pett et al., 2003).

The Cattell-Nelson-Gorsuch objective scree technique also supported four factors (Cattell, 1966; Gorsuch, 1983), whereas the Kaiser-Guttman rule (Guttman, 1954; Kaiser, 1960, 1970) suggested extracting six factors, since there were six variables with eigenvalues greater than one. Lastly, Pett et al.'s rule of thumb that extracted factors should explain 75-85% of the variance suggested extracting at least seven factors (see Table A4 below). However, as Pett et al. point out, a lower percentage is often used in the social sciences. Based on consideration of these multiple criteria and the desire for a relatively parsimonious number of factors, a decision was made to extract four factors.

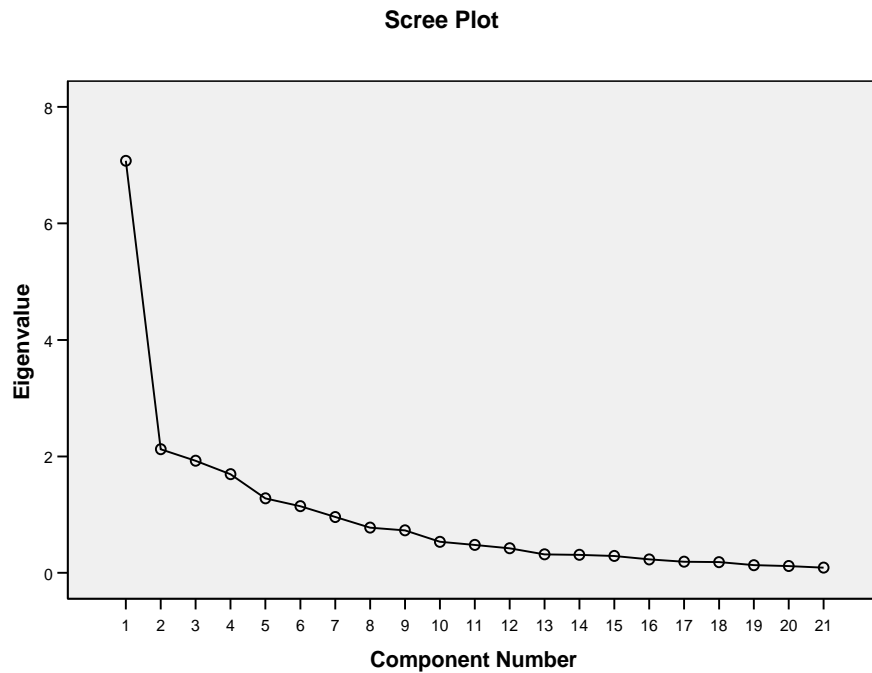


Figure A1. Scree plot obtained with 21 components extracted.

Table A4

Total Variance Explained by PCA with 21 Components Extracted

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	7.08	33.69	33.69
2	2.12	10.11	43.80
3	1.93	9.17	52.97
4	1.69	8.07	61.04
5	1.28	6.09	67.13
6	1.14	5.45	72.58
7	.96	4.57	77.15
8	.78	3.70	80.84
9	.73	3.47	84.31
10	.53	2.54	86.85
11	.48	2.29	89.13
12	.42	2.06	91.14
13	.32	1.51	92.65
14	.31	1.47	94.13
15	.29	1.38	95.51
16	.23	1.10	96.61
17	.19	.91	97.51
18	.19	.88	98.40
19	.13	.63	99.02
20	.12	.56	99.58
21	.09	.42	100.00

PAF analyses. Using PAF to extract four factors produced the factor matrix presented in Table A5. To improve interpretability, this initial solution was rotated using oblique rotation methods. Oblique methods, in contrast to orthogonal ones, allow factors to correlate, and correlations across the factors were indeed expected. Because there are no established guidelines for selecting among rotation methods (Hair et al., 2006), both Direct Oblimin and Promax methods, the two oblique techniques available in SPSS, were employed so that their solutions could be compared. Tables A5-A11 display the factor, pattern, factor structure, and factor correlation matrices obtained through these procedures.

As explained in Chapter 4, researchers disagree about whether the factor pattern matrix, in which the loadings represent the relationship of the items to the factors having controlled for the relations among the factors, or the factor structure matrix, in which the loadings represent the zero-order correlations of the variables with the factors, should be the focus for interpretation (Pett et al., 2003). My focus is on the factor pattern matrices, in line with the argument that a pattern of loadings is usually easier to discern in this matrix (Hair et al., 2006; Tabachnick & Fidell, 2001), but the factor structure matrices are also included so that readers can examine both.

Table A5

Factor Loadings Obtained with Extraction of Four Factors Using PAF (Without Rotation)

Variable	Factor			
	1	2	3	4
Mo helps pick items to read	.66	.33	.08	-.24
Mo encourages reading	.41	.56	.09	<-.01
Mo reads with child	.57	.36	-.07	-.12
Mo talks about reading	.66	.14	.13	.23
Mo reads in free time	.22	.62	.06	-.18
Mo gives books as presents	.47	.24	.01	-.19
Mo plays word games/puzzles with child	.53	-.11	-.26	-.20
Mo says to stop reading	.61	-.44	-.21	-.25
Fa helps pick items to read	.61	.16	-.06	.14
Fa encourages reading	.60	.23	-.36	.39
Fa reads with child	.64	.01	-.30	.34
Fa talks about reading	.51	-.18	-.12	.56
Fa gives books as presents	.57	-.03	-.27	-.09
Fa plays word games/puzzles with child	.49	-.10	-.53	-.13
Fa says to stop reading	.54	-.33	-.04	-.38
Bf helps pick items to read	.60	-.05	.62	-.02
Bf encourages reading	.74	-.14	.37	-.08
Bf reads with child	.64	-.27	.31	.17
Bf talks about reading	.55	-.29	.28	.20
Bf gives books as presents	.45	-.02	.26	-.02
Bf plays word games/puzzles with child	.53	-.17	-.10	-.34

Note. Mo = mother. Fa = father. Bf = best friend.

Table A6

Pattern Matrix Obtained with Extraction of Four Factors Using PAF and Direct Oblimin

Rotation

Variable	Factor			
	1	2	3	4
Mo helps pick items to read	.25	.58	.21	.00
Mo encourages reading	-.14	.67	.08	.13
Mo reads with child	.20	.54	.04	.13
Mo talks about reading	-.04	.26	.40	.39
Mo reads in free time	-.10	.72	-.07	-.08
Mo gives books as presents	.22	.41	.11	-.01
Mo plays word games/puzzles with child	.57	.08	-.02	.11
Mo says to stop reading	.77	-.19	.15	.04
Fa helps pick items to read	.11	.27	.17	.38
Fa encourages reading	.05	.24	-.09	.74
Fa reads with child	.19	.06	.04	.67
Fa talks about reading	-.05	-.21	.24	.73
Fa gives books as presents	.48	.13	-.02	.24
Fa plays word games/puzzles with child	.65	.04	-.29	.28
Fa says to stop reading	.69	-.06	.22	-.18
Bf helps pick items to read	-.06	.17	.86	-.11
Bf encourages reading	.22	.12	.70	-.01
Bf reads with child	.10	-.11	.67	.21
Bf talks about reading	.06	-.17	.62	.22
Bf gives books as presents	.07	.13	.43	.01
Bf plays word games/puzzles with child	.62	.08	.12	-.10

Note. Mo = mother. Fa = father. Bf = best friend.

Table A7

Structure Matrix Obtained with Extraction of Four Factors Using PAF and Direct Oblimin Rotation

Variable	Factor			
	1	2	3	4
Mo helps pick items to read	.46	.69	.43	.26
Mo encourages reading	.10	.68	.22	.26
Mo reads with child	.40	.63	.27	.34
Mo talks about reading	.31	.43	.55	.54
Mo reads in free time	.02	.66	.04	.03
Mo gives books as presents	.36	.49	.28	.19
Mo plays word games/puzzles with child	.62	.24	.23	.32
Mo says to stop reading	.79	.04	.40	.31
Fa helps pick items to read	.37	.42	.38	.52
Fa encourages reading	.34	.40	.19	.79
Fa reads with child	.45	.26	.30	.76
Fa talks about reading	.25	.00	.37	.73
Fa gives books as presents	.58	.30	.25	.43
Fa plays word games/puzzles with child	.65	.19	.03	.44
Fa says to stop reading	.69	.12	.41	.11
Bf helps pick items to read	.25	.33	.84	.14
Bf encourages reading	.51	.33	.81	.29
Bf reads with child	.39	.12	.74	.40
Bf talks about reading	.32	.04	.66	.37
Bf gives books as presents	.26	.25	.49	.18
Bf plays word games/puzzles with child	.64	.23	.33	.17

Note. Mo = mother. Fa = father. Bf = best friend.

Table A8

Factor Correlation Matrix Obtained with Extraction of Four Factors Using PAF and

Direct Oblimin Rotation

Factor	1	2	3	4
1	—			
2	.24	—		
3	.36	.23	—	
4	.35	.22	.27	—

Table A9

*Pattern Matrix Obtained with Extraction of Four Factors Using PAF and Promax**Rotation*

Variable	Factor			
	1	2	3	4
Mo helps pick items to read	.18	.22	-.06	.60
Mo encourages reading	.05	-.20	.11	.69
Mo reads with child	.00	.17	.11	.55
Mo talks about reading	.39	-.11	.39	.23
Mo reads in free time	-.10	-.13	-.11	.76
Mo gives books as presents	.08	.20	-.04	.43
Mo plays word games/puzzles with child	-.05	.58	.09	.06
Mo says to stop reading	.14	.80	.02	-.23
Fa helps pick items to read	.15	.06	.38	.25
Fa encourages reading	-.14	-.01	.79	.21
Fa reads with child	.00	.13	.71	.01
Fa talks about reading	.24	-.11	.79	-.28
Fa gives books as presents	-.06	.47	.23	.11
Fa plays word games/puzzles with child	-.34	.67	.29	.01
Fa says to stop reading	.21	.73	-.22	-.08
Bf helps pick items to read	.90	-.12	-.16	.16
Bf encourages reading	.72	.18	-.04	.10
Bf reads with child	.70	.05	.20	-.15
Bf talks about reading	.65	.01	.22	-.21
Bf gives books as presents	.45	.04	-.02	.12
Bf plays word games/puzzles with child	.10	.64	-.14	.07

Note. Mo = mother. Fa = father. Bf = best friend.

Table A10

Structure Matrix Obtained with Extraction of Four Factors Using PAF and Promax

Rotation

Variable	Factor			
	1	2	3	4
Mo helps pick items to read	.47	.50	.35	.72
Mo encourages reading	.25	.14	.30	.68
Mo reads with child	.32	.42	.40	.65
Mo talks about reading	.58	.35	.58	.48
Mo reads in free time	.06	.05	.07	.64
Mo gives books as presents	.31	.38	.25	.51
Mo plays word games/puzzles with child	.28	.62	.37	.29
Mo says to stop reading	.44	.79	.37	.12
Fa helps pick items to read	.42	.41	.56	.47
Fa encourages reading	.24	.38	.80	.45
Fa reads with child	.35	.48	.78	.33
Fa talks about reading	.40	.28	.72	.06
Fa gives books as presents	.30	.60	.48	.35
Fa plays word games/puzzles with child	.09	.65	.48	.24
Fa says to stop reading	.44	.69	.19	.19
Bf helps pick items to read	.84	.29	.20	.38
Bf encourages reading	.82	.54	.37	.41
Bf reads with child	.75	.42	.44	.19
Bf talks about reading	.67	.35	.40	.11
Bf gives books as presents	.50	.28	.22	.29
Bf plays word games/puzzles with child	.37	.65	.24	.29

Note. Mo = mother. Fa = father. Bf = best friend.

Table A11

Factor Correlation Matrix Obtained with Extraction of Four Factors Using PAF and Promax Rotation

Factor	1	2	3	4
1	—			
2	.47	—		
3	.39	.48	—	
4	.35	.37	.38	—

The four-factor Direct Oblimin and Promax rotated solutions were highly similar (see Tables A6 and 9A). In particular, the pattern matrices showed that the same items grouped together on the same factors; however, the order in which the factors emerged differed, and, overall, the loadings obtained through the Promax rotation were slightly higher. The structure matrices differed more, in that the Direct Oblimin rotation produced a structure matrix in which 9 items had multiple loadings greater than .40, the cutoff value generally used to infer statistical significance of factor loadings in the present study; the Promax rotation produced 13 items with multiple loadings above .40. Although, as indicated above, the focus is on the pattern matrices, because of the somewhat greater clarity in the structure matrix obtained with the Direct Oblimin solution, henceforth only the results obtained with that type of rotation are presented and discussed.

As seen in Table A6, the four-factor solution with Direct Oblimin rotation nearly satisfied Thurstone's (1947) criteria for simple structure. All but two variables clearly and significantly loaded on a single factor. The two variables that did not were *father*

helps child pick items to read and *mother talks about reading*. The former's highest loading (.38) was slightly below the .40 cutoff used for significant loadings, and the latter had one loading exactly at the .40 cutoff, but also one loading just below it, at .39, and also loaded at .26 on another factor.

Notably, this four factor solution was also largely interpretable, except for Factor 1, a point that is returned to once the other three factors are discussed. Factor 2 was named *mother support* because each of its five significant loadings were for items concerning how mothers may support their children's reading. Factor 3 was named *best friend support* because five of its six significant loadings were for items concerning best friends. In addition, *mother talks about reading* loaded at .40 on this factor, but as mentioned above, this loading was not very distinct from its loading on Factor 4. Factor 4 was named *father support* because each of its three significant loadings were for items concerning fathers, plus a fourth item, *father helps child pick items to read*, had its only nearly significant loading on this factor.

On Factor 1, six items had unique loadings above .40, including *says to stop reading*, for both mothers and fathers; *plays word games/ puzzles*, for all three socialization agents; and *father gives books as presents*. These items did not appear to be related for conceptual reasons. Therefore, this factor was deemed uninterpretable, and all but one of the items that had loaded on it, *father gives books as presents*, were eliminated. Then a new solution with three factors instead of four was obtained. *Father gives books as presents* was retained because the literature review suggested that giving books as presents is a key way that parents support older children's reading motivation and frequency (whereas the literature does not suggest as strongly that playing word

games with others is an important form of reading support, or that others frequently attempt to discourage children's reading). Plus, the comparable items for mothers and best friends had fallen on conceptually sensible factors in the analysis, so it was retained in order to see whether this father item would also load in a more meaningful manner when only three factors were extracted.

The output obtained from the three-factor solution, in which Direct Oblimin rotation was also employed, is displayed in Tables A12-A15. The pattern matrix again suggests, as it did in the four-factor solution, that there are distinct mother support (Factor 2), father support (Factor 3), and best friend support (Factor 1) factors, and, furthermore, shows that *father gives books as presents*, did indeed move to the father support factor. In addition, the loading of *father helps pick reading materials*, increased to a significant level, while *mother talks about reading* again failed to load distinctly on any factor, with its highest loading falling on the best friend support factor. It should be noted that this item was retained in this analysis because of its conceptual importance; that is, the literature review for this study suggested that it discussion of reading with parents is an important characteristic of frequent, motivated readers.

Table A12

Factor Loadings Obtained with Extraction of Three Factors Using PAF (Without Rotation): Initial Solution

Variable	Factor		
	1	2	3
Mo helps pick items to read	.66	.36	.21
Mo encourages reading	.49	.42	.13
Mo reads with child	.57	.40	.05
Mo talks about reading	.69	-.04	.01
Mo reads in free time	.28	.52	.24
Mo gives books as presents	.46	.23	.13
Fa helps pick items to read	.64	.14	-.20
Fa encourages reading	.61	.19	-.46
Fa reads with child	.66	.00	-.51
Fa talks about reading	.52	-.30	-.41
Fa gives books as presents	.50	.06	-.20
Bf helps pick items to read	.64	-.28	.49
Bf encourages reading	.74	-.27	.33
Bf reads with child	.65	-.41	.06
Bf talks about reading	.56	-.47	.05
Bf gives books as presents	.46	-.13	.19

Note. Mo = mother. Fa = father. Bf = best friend.

Table A13

Pattern Matrix Obtained with Extraction of Three Factors Using PAF and Direct

Oblimin Rotation: Initial Solution

Variable	Factor		
	1	2	3
Mo helps pick items to read	.23	.63	-.10
Mo encourages reading	.04	.60	-.11
Mo reads with child	.04	.58	-.23
Mo talks about reading	.40	.20	-.30
Mo reads in free time	-.07	.67	.09
Mo gives books as presents	.16	.42	-.09
Fa helps pick items to read	.10	.26	-.51
Fa encourages reading	-.14	.20	-.77
Fa reads with child	-.02	.02	-.84
Fa talks about reading	.20	-.26	-.65
Fa gives books as presents	.08	.15	-.44
Bf helps pick items to read	.88	.16	.24
Bf encourages reading	.82	.13	.02
Bf reads with child	.68	-.13	-.21
Bf talks about reading	.67	-.22	-.18
Bf gives books as presents	.47	.11	.00

Note. Mo = mother. Fa = father. Bf = best friend.

Table A14

Structure Matrix Obtained with Extraction of Three Factors Using PAF and Direct

Oblimin Rotation: Initial Solution

Variable	Factor		
	1	2	3
Mo helps pick items to read	.46	.73	-.39
Mo encourages reading	.26	.64	-.29
Mo reads with child	.30	.65	-.41
Mo talks about reading	.59	.40	-.54
Mo reads in free time	.08	.62	-.06
Mo gives books as presents	.32	.49	-.28
Fa helps pick items to read	.40	.43	-.63
Fa encourages reading	.27	.37	-.76
Fa reads with child	.37	.25	-.83
Fa talks about reading	.42	-.03	-.67
Fa gives books as presents	.32	.29	-.52
Bf helps pick items to read	.82	.34	-.21
Bf encourages reading	.84	.35	-.39
Bf reads with child	.74	.12	-.49
Bf talks about reading	.69	.02	-.43
Bf gives books as presents	.51	.25	-.25

Note. Mo = mother. Fa = father. Bf = best friend.

Table A15

Factor Correlation Matrix Obtained with Extraction of Four Factors Using PAF and Direct Oblimin Rotation: Initial Solution

Factor	1	2	3
1	—		
2	.28	—	
3	-.46	-.28	—

The three-factor solution described above also revealed that the three items pertaining to receiving books as presents were candidates for deletion. In that analysis, these items had the lowest loadings on their primary factors (all less than or equal to .47), and the lowest communalities (all less than or equal to .30); thus, they were not in a practical sense contributing much to the factors. Furthermore, *best friend gives books as presents* was the most nonnormally distributed of all items initially included for analysis. Specifically, this item was extremely positively skewed, as 77.4% students who responded to this item responded “0” for this item, while 20.8% responded “1-3”, and 1.9% responded “4-6”; none used the two largest options on the scale. The distribution of *father gives books as presents* was also far from normal, with 80% of respondents using the “0” or “1-3” options.

When the three items pertaining to receiving books as presents were eliminated and three factors were again extracted, with Direct Oblimin rotation, the results displayed in Tables 16-19 were obtained. In these final analyses, four items loaded distinctly on each of the three factors, which again appeared to represent mother support (Factor 2), father support (Factor 3), and best friend support (Factor 1). Still, the only factor that did

not load clearly on any factor was *mother talks about reading*. The three factors showed weak to moderate correlations, suggesting that they are somewhat related but still unique factors, and also, therefore, that oblique rather than orthogonal rotation methods were warranted.

Table A16

Factor Loadings Obtained with Extraction of Three Factors Using PAF (Without Rotation): Final Solution

Variable	Factor		
	1	2	3
Mo helps pick items to read	.66	.39	.21
Mo encourages reading	.47	.40	.13
Mo reads with child	.59	.45	.01
Mo talks about reading	.69	-.03	-.07
Mo reads in free time	.26	.51	.24
Fa helps pick items to read	.65	.15	-.16
Fa encourages reading	.63	.17	-.49
Fa reads with child	.65	.01	-.42
Fa talks about reading	.53	-.32	-.47
Bf helps pick items to read	.66	-.24	.48
Bf encourages reading	.74	-.27	.38
Bf reads with child	.64	-.38	.08
Bf talks about reading	.58	-.46	.12

Note. Mo = mother. Fa = father. Bf = best friend.

Table A17

Pattern Matrix Obtained with Extraction of Three Factors Using PAF and Direct

Oblimin Rotation: Final Solution

Variable	Factor		
	1	2	3
Mo helps pick items to read	.23	.66	-.10
Mo encourages reading	.06	.58	-.10
Mo reads with child	.01	.63	-.27
Mo talks about reading	.34	.20	-.39
Mo reads in free time	-.04	.64	.11
Fa helps pick items to read	.12	.31	-.47
Fa encourages reading	-.14	.20	-.80
Fa reads with child	.04	.09	-.73
Fa talks about reading	.17	-.28	-.72
Bf helps pick items to read	.85	.19	.19
Bf encourages reading	.84	.16	.05
Bf reads with child	.66	-.09	-.20
Bf talks about reading	.71	-.17	-.13

Note. Mo = mother. Fa = father. Bf = best friend.

Table A18

Structure Matrix Obtained with Extraction of Three Factors Using PAF and Direct

Oblimin Rotation: Final Solution

Variable	Factor		
	1	2	3
Mo helps pick items to read	.43	.74	-.36
Mo encourages reading	.25	.62	-.27
Mo reads with child	.28	.69	-.42
Mo talks about reading	.55	.38	-.58
Mo reads in free time	.07	.61	-.03
Fa helps pick items to read	.40	.46	-.60
Fa encourages reading	.26	.36	-.79
Fa reads with child	.38	.28	-.76
Fa talks about reading	.42	-.06	-.72
Bf helps pick items to read	.81	.35	-.22
Bf encourages reading	.86	.35	-.35
Bf reads with child	.73	.12	-.47
Bf talks about reading	.73	.03	-.40

Note. Mo = mother. Fa = father. Bf = best friend.

Table A19

Factor Correlation Matrix Obtained with Extraction of Four Factors Using PAF and Direct Oblimin Rotation: Final Solution

Factor	1	2	3
1	—		
2	.25	—	
3	-.44	-.25	—

As discussed in Chapter 4, Guadagnoli and Velicer (1988) developed guidelines for factor analysis sample size related to the magnitude of factor loadings. According to their guidelines, any factor is reliable, regardless of sample size, if it has either (a) three loadings above .80 or (b) four loadings above .60. In addition, factors with 10 or more low (.40) loadings are considered reliable if the sample is comprised of more than 150. Based on these criteria, the best friend support factor, in the final three-factor solution, is reliable despite the small sample size of 55 because it has four loadings above .60. However, the mother support factor does not quite meet this criterion; it has only three loadings above .60 (although a fourth, notably, is .58). The father support factor also fails to meet this criterion, as it likewise has only three loadings above .60.

Psychometric Properties of the RSS

Based on the three-factor solutions described above, three scales were created from children’s responses to the P-RSS, including mother support, father support, and best friend support, and their psychometric properties were examined. My aim was to arrive at reliable scales that incorporated the same items; that is, scales that differed only in the socialization agent to which the items applied, not in the item content per se. In this

way, it seemed that the subsequent analyses employing the scales would be most easily interpretable, although one could conversely argue that the scales need not consist of the same items because practically or conceptually speaking, support for reading from one's best friend, for example, may mean something very different from support for reading from one's mother or father. In constructing the scales, the extent to which excluding the items pertaining to receiving books as presents would affect the reliability and other characteristics of the scales was particularly of interest, given the characteristics of these items in the factor analysis.

First, a scale consisting of the five items pertaining to best friends that loaded significantly on Factor 1 in the initial three-factor solution was analyzed. Although *mother talks about reading* loaded exactly at .40 on this factor, it was excluded here because it did not fit conceptually with the other items. The Cronbach's α of this 5-item scale was .83. The analysis output showed that elimination of one item, *best friend gives books as presents*, would increase Cronbach's α . The increase was only to .85, but given the concerns about the distribution of this item and its loading and communality in the three-factor solution, the item was eliminated from the final scale. Plus, the item had the lowest item-total correlation (.51) in this analysis. Other statistics for this scale, as well as those for the mother and father support scales, are presented in Table A20.

Table A20

Characteristics of the Scales Formed from the RSS

Scale	Cronbach's α	Item-total correlations (range)	<i>M</i> (<i>SD</i>)
Mother support: 6 items	.78	.43-.63	11.55 (4.80)
Mother support: 4 items	.77	.51-.64	7.35 (3.36)
Father support: 5 items	.81	.50-.75	5.96 (3.92)
Father support: 4 items	.80	.56-.70	5.20 (3.45)
Best friend support: 5 items	.83	.51-.75	4.73 (3.92)
Best friend support: 4 items	.85	.63-.77	4.62 (3.73)

Similarly, a mother support scale consisting of all five items which loaded significantly on Factor 2 in the initial three-factor solution was analyzed. The item mother discusses reading with child was included in this scale, because it fit conceptually with it, although it did not load clearly on any factor in any analysis, as detailed above. This six-item scale had a Cronbach's α of .78. The analysis also showed that Cronbach's α would not be improved through item deletion. However, based on the desire for the three support scales to contain the same items, *mother reads in free time* was eliminated, since *reads in free time* for both fathers and best friends had been eliminated prior to the factor analysis because of their low MSA values; furthermore, this item had the lowest item-total correlation of the six items (.43). *Mother gives books as presents* was also eliminated. With the elimination of these items, the Cronbach's α of the mother support scale was reduced only slightly, to .77.

Lastly, a father support scale consisting of the five items that loaded significantly on Factor 3 in the initial three-factor solution was examined. This scale had a Cronbach's α of .81. Although the analysis showed that the deletion of any items would not improve this value, *father gives books as presents* was eliminated, so that the scale would align with the best friend and mother support scales. This item elimination also reduced Cronbach's α only slightly, to .80.

In sum, factor and reliability analyses, in combination with conceptual concerns, led to the formation of separate mother support, father support, and best friend support scales with moderately high Cronbach's α reliabilities. The properties of four-item and five- or six-item scales were compared, and, for the subsequently described analyses, I decided to employ the four-item scales. Each of these scales consists of the same four items with respect to each person: *helps pick items to read, encourages reading, reads with child, and talks about reading*. Scores on the scales were formed by summing responses to the items comprising them, so that higher scores indicated greater support.

Comparisons of Perceived Support from Different Socialization Agents, Reading Motivation, and Reading Frequency

Paired sample *t* tests showed that overall participants perceived higher mother support ($M = 7.12, SD = 3.36$) than father support ($M = 5.14, SD = 3.46$), $t(48) = 4.38, p < .001$, as well as higher mother support ($M = 7.27, SD = 3.44$) than best friend support ($M = 4.57, SD = 3.75$), $t(48) = 5.03, p < .001$. The students did not experience different levels of father and best friend support.

To analyze whether students differed in perceived support from each socialization agent based on gender, ethnic status, or interactions between these variables, a series of 2

x 2 ANOVAs was conducted. Perceived mother support was higher for girls than boys, $F(1, 50) = 6.69, p < .01$, and marginally higher for minority than majority students $F(1, 50) = 3.68, p < .10$. Also, perceived best friend support was higher for minority than majority students, $F(1, 46) = 6.92, p < .05$. There were no other differences related to gender or ethnicity, and no interactions between gender and ethnic status. Table 21 displays the descriptive statistics relevant to this and the next series of ANOVAs. (Note that the overall means displayed in this table differ slightly from those reported in the previous paragraph because each paired sample t test represents only participants who have scores for both variables included in the analysis.)

Similarly, a series of 2 x 2 ANOVAs was run to determine whether there were any differences in reading motivation or frequency related to gender, ethnic status, or interactions between these variables. According to these analyses, there were significant main effects for gender favoring girls on one of the three reading frequency scales, book-reading, $F(1, 46) = 6.92, p < .05$, and three of the seven motivation scales: autonomy $F(1, 48) = 7.59, p < .01$; enthusiasm, $F(1, 50) = 4.73, p < .05$; and avoidance, $F(1, 51) = 11.85, p < .01$. However, there was a significant interaction between gender and ethnicity for avoidance, such that ethnic majority females indicated the least avoidance and ethnic majority males the most avoidance, $F(1, 51) = 6.53, p < .01$. The ethnic minority males and females had means which fell between those for these students, with the females' mean a little lower than the males' mean. There was also an interaction effect for difficulty, which showed the same pattern of means, except the ethnic minority males reported a bit less difficulty than the ethnic minority females, $F(1, 51) = 6.05, p < .05$.

Table A21

Descriptive Statistics for Reading Support, Motivation, and Frequency Variables

Variable	Overall			Females			Males			Ethnic majority			Ethnic minority		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Mother support	54	7.35	3.36	26	8.69	3.62	28	6.11	2.59	27	6.30	2.91	27	8.41	3.50
Father support	50	5.20	3.45	23	5.61	3.31	27	4.85	3.59	26	4.58	3.61	24	5.88	3.20
Best friend support	50	4.62	3.73	24	5.04	4.22	26	4.23	3.25	26	3.31	2.20	24	6.04	4.51
Autonomy	52	12.12	3.08	24	13.25	2.15	28	11.14	3.43	26	12.23	3.55	26	12.00	2.58
Knowledge goals/ interest	52	24.71	6.01	24	26.38	5.22	28	23.29	6.36	26	23.77	6.51	26	25.65	5.42
Efficacy/challenge	52	20.50	4.89	24	21.75	4.66	28	19.42	4.90	26	19.81	5.54	26	21.19	4.14
Competence	55	22.22	2.74	26	22.81	2.79	29	21.69	2.63	27	22.22	3.19	28	22.21	2.28
Difficulty	55	14.42	3.53	26	13.58	4.00	29	15.17	2.92	27	14.59	3.72	28	14.25	3.40
Enthusiasm	54	20.07	4.36	26	21.27	4.48	28	18.96	4.01	26	20.42	4.75	28	19.75	4.02
Avoidance	55	13.95	4.13	26	12.27	3.78	29	15.45	3.90	27	13.81	4.71	28	14.07	3.57
Book reading	55	2.27	1.11	26	2.62	1.13	29	1.97	1.02	27	2.19	1.27	28	2.36	.95
Magazine reading	54	1.96	.99	26	2.12	1.18	28	1.82	.77	27	1.70	.82	27	2.22	1.09
Web site reading	54	2.24	1.18	26	2.42	1.03	28	2.07	1.30	27	2.11	1.28	27	2.37	1.08

Relations of Perceived Support for Reading with Reading Motivation and Reading Frequency

Correlational analyses. To examine how perceived support from each socialization agent related to reading motivations and reading frequency, first zero-order correlations with pairwise exclusion were calculated among the three support, seven motivation, and three reading frequency variables (the n for the correlations ranged from 43 to 53). As shown in Table A22, notably, mother support correlated moderately with all motivation constructs except competence and difficulty, as well as with all reading frequency variables. Father support correlated significantly only with enthusiasm and book reading frequency. Best friend support correlated significantly only with enthusiasm. These correlations were all positive, indicating that greater support was associated with greater reading motivation and more frequent reading, except for the negative correlation of mother support and avoidance, indicating that greater support was associated with less desire to avoid reading.

In addition, partial correlations were calculated among the reading support, motivation, and frequency variables, using reading performance on the Gates-MacGinitie comprehension test as the control variable. This variable was employed because reading skill has frequently been shown to relate positively with reading motivation and frequency (e.g., Cunningham & Stanovich, 1997; Guthrie et al., 1999), as well as occasionally with parent support for children's reading (e.g., Greaney & Hegarty, 1987; Hansen, 1969). Thus it was speculated that including this control variable would generally reduce the observed zero-order correlations, either slightly or moderately. Interestingly, this was not the case; rather, the partial correlations of the support variables

with the motivation and frequency variables were generally of the same magnitude or greater than the comparable zero-order correlations, as shown in Table A22. Especially of note is that the partial correlations between mother support and difficulty as well as father support and avoidance were significant while the corresponding zero-order correlations were not. In addition, the partial correlations between best friend support and three motivation and frequency variables – autonomy, knowledge/interest goals, efficacy/challenge, and book reading – were significant, while the corresponding zero-order correlations were not.

The nature of these differences between the zero-order and partial order correlations suggests that the relations among perceived reading support, reading motivation and frequency, and reading achievement are complex, and may not be fully understood through correlational analyses of data collected at a single time point.

Table A22

Zero-order and Partial Correlations among Reading Support, Motivation, and Frequency Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Mother support	—												
2. Father support	.57***	—											
	.57***												
3. Best friend	.46**	.39**	—										
support	.48**	.36*											
4. Autonomy	.33*	.16	.16	—									
	.38**	.27	.36*										
5. Knowledge	.30*	.12	.28	.53***	—								
goals/interest	.30*	.14	.33*	.56***									
6. Efficacy/	.46**	.17	.12	.51***	.42**	—							
challenge	.52***	.27	.29*	.41**	.43**								
7. Enthusiasm	.42**	.30*	.31*	.53***	.47**	.68***	—						
	.42**	.33*	.38*	.53***	.46**	.69***							
8. Avoidance	-.35*	-.25	.00	-.67***	-.35*	-.54***	-.66***	—					
	-.40**	-.37**	-.17	-.60***	-.36*	-.45**	-.68***						

Note. There are two lines within each row: the top row contains the zero-order correlations; the bottom line, the partial correlations with reading performance as a control. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table A22, continued

Zero-order and Partial Correlations among Reading Support, Motivation, and Frequency Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
9. Competence	.23	.04	.06	.48***	.33*	.61***	.51***	-.50***	—				
	.24	.08	.14	.45**	.32*	.59***	.51***	-.47***					
10. Difficulty	-.22	-.01	.23	-.37**	-.08	-.70***	-.37**	.55***	-.63***	—			
	-.27*	-.13	.07	-.18	-.05	-.62***	-.36**	-.36**	-.62***				
11. Book reading	.54***	.38**	.22	.53***	.43**	.69***	.69***	-.59***	.57***	-.55***	—		
	.56***	.43**	.30*	.51***	.42**	.68***	.68***	-.58***	.55***	-.55***			
12. Magazine	.34*	.04	.21	.15	.25	.14	.26	-.19	.07	-.12	.30*	—	
reading	.35*	.06	.26	.13	.25	.11	.25	-.16	.05	-.08	.29*		
13. Web site	.30*	.21	.07	.04	.28*	.34*	.22	-.13	.00	-.20	.42**	.43**	—
reading	.30*	.24	.12	-.02	.28	.32*	.20	-.09	-.02	-.17	.41**	.42**	

Note. There are two lines within each row: the top row contains the zero-order correlations; the bottom line, the partial correlations with reading performance as a control. * $p < .05$. ** $p < .01$. *** $p < .001$.

Cluster analysis. To investigate whether children may meaningfully be grouped on the basis of patterns of support from different socialization agents, cluster analysis was conducted. The analysis followed Hair et al.'s (2006) recommendation of first using a hierarchical method to obtain a range of cluster solutions efficiently, and then using a nonhierarchical method to reach a final solution.

In the hierarchical phase of analysis, the average (or between groups) linkage algorithm and the squared Euclidean distance measure in SPSS were first utilized to obtain all possible solutions for clustering the participants based on their mother, father, and best friend support scores. Based on the proportional increase in the agglomeration coefficient from stage to stage and examination of the number of children per cluster in the 2- through 8-cluster solutions, a 3-cluster solution seemed most reasonable. However, inspection of the mean, standard deviation, and range statistics for mother, father, and best friend support for each of the three clusters suggested that the clusters were not very homogeneous, and not very distinct from each other. Thus, a second hierarchical analysis was run using the complete (or furthest neighbor) linkage algorithm. Based again on proportional increase in the agglomeration coefficients and inspection of the 2- through 8-cluster solutions, a 4-cluster solution seemed most suited to the data. These clusters appeared both more distinct from each other and more homogeneous within clusters than those produced by the average linkage 3-cluster solution, based on descriptive statistics and inspection of 2- and 3-dimensional scatterplots for the support variables. Therefore, the reading support means for each of the four clusters were selected for use as initial seed points (see Table A23) in the subsequent nonhierarchical phase of analysis. It should be noted, though, that Cluster 4 was quite small, with only three members; given the

small overall sample used in the analysis, it is difficult to say whether these three cases represented outliers or a true segment of the population that was underrepresented in this sample due to chance.

In the nonhierarchical phase, the *k*-means clustering method, which utilizes the single linkage (or nearest neighbor) algorithm and simple Euclidean distance measure in SPSS, refined the cluster seed points from the hierarchical analysis, as shown in Table A23. Table A24 presents the standardized scores for each of the four clusters on the mother, father, and best friend support scales. These scores were used in interpreting the pattern for each cluster. The standardized scores were considered low if they were $-.50$ or below, average if they were in between $-.50$ and $.50$, and high if they were above $.50$ (Murdock & Miller, 2003). Thus, Cluster 1 was characterized by high best friend support and average mother and father support; Cluster 2, by low support from all figures; Cluster 3, by high mother and father support and average best friend support; and Cluster 4 by high support from all figures. Interestingly, none of the clusters showed high support from one parent but low or average support from the other.

Table A23

Initial and Final Seed Points in the Nonhierarchical Cluster Analysis

Cluster	Mother support		Father support		Best friend support	
	Initial	Final	Initial	Final	Initial	Final
1	8.78	8.50	5.00	4.63	8.67	9.00
2	4.29	4.29	2.52	2.52	2.38	2.38
3	8.82	8.91	7.64	7.18	3.18	3.09
4	14.00	13.00	9.00	10.00	10.00	9.25

Table A24

Standard Scores on Each Clustering Variable for the 4-Cluster Nonhierarchical Solution

Cluster	N	Mother support	Father support	Best friend support	Support characteristics
1	8	.44	-.04	1.26	High best friend, average mother and father
2	21	-.79	-.67	-.55	All low
3	11	.55	.73	-.35	High mother and father, average best friend
4	4	1.74	1.58	1.33	All high

Lastly, predictions were made regarding how the clusters might differ in terms of reading motivation and frequency, and their means on each motivation and frequency variable included in the study were examined. Since the membership of each cluster, especially clusters 1 and 4, was rather small, first the pattern of means for each variable simply was visually inspected. Table A25 displays the predictions made versus their outcomes based on the pattern of means for each variable. Statistical analysis was then used, only to compare Clusters 2 and 3. Independent sample *t*-tests indicated that Cluster 3, as compared to Cluster 2, scored significantly higher on enthusiasm and book reading and lower on avoidance ($p < .05$) and marginally higher on autonomy and efficacy/challenge ($p < .10$); there were no differences on any of the other motivation or frequency variables. Table A26 displays the means for both clusters on each of the variables where there were differences and the results of the statistical tests. Certainly, given the small cluster sizes, the results reported in both Tables A25 and A26 should be viewed with extreme reserve.

Table A25

Predictions for Reading Motivation and Frequency based on Cluster Membership and Their Outcomes based on the Pattern of Means for Each Motivation and Frequency Variable

Prediction	Outcome
C2 lowest for 5 of 5 positive motivations and 3 of 3 reading frequencies	True for all but competence (C3 equal), magazine reading (C1 lower) and web site reading (C1, C3 equal)
C2 highest for 2 of 2 negative motivations	True for avoidance; False for difficulty (C1 higher)
C4 highest for 5 of 5 positive motivations and reading frequencies	True
C4 lowest for 2 of 2 negative motivations	False (C3 equal for both)
C1 equal to or lower than C3 for 5 of 5 positive motivations and 3 of 3 reading frequencies	True for enthusiasm, competence, book reading, web site reading False for autonomy knowledge goals/interest, efficacy/challenge, magazine reading
C1 equal to or higher than C3 for 2/2 negative motivations	True

Note. C refers to cluster. Positive motivations include autonomy, knowledge goals/interest, efficacy/challenge, enthusiasm and competence. Reading frequencies include book, magazine, and web site reading. Negative motivations include avoidance and difficulty. Equal means that the means were within .20 units.

Table A26

Descriptive Statistics for Clusters Statistically Compared on Reading Motivation and Frequency

Variable	Cluster 2		Cluster 3	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Autonomy*	10.90	3.60	13.00	2.37
Efficacy/challenge*	18.10	4.68	21.45	4.59
Enthusiasm**	18.05	4.40	22.10	4.01
Avoidance***	15.81	4.32	11.45	1.86
Book reading***	1.67	1.06	2.73	.79

Note. * $p < .10$, ** $p < .05$. *** $p < .01$

Perhaps most interesting to note is that children who were high in best friend support (while average in support from both parents) and children who were high in both mother and father support (while average in best friend support) did not appear to differ much in their reading motivation and frequency levels. Furthermore, those with high support from all three socialization agents showed the most positive pattern of motivation and frequency of all clusters. If these findings replicated in a more powerful analysis, it would suggest that the source of reading support may not matter as much as the amount, in terms of relations with reading motivation and frequency, and that the various sources may be additive.

Summary

Factor and reliability analyses supported the formation of separate scales representing mother, father, and best friend support for reading. On the whole, children perceived greater support for reading from their mothers than from either their fathers or best friends, with further analyses indicating that perceived mother support was higher for girls than boys and (marginally) higher for ethnic minority than majority students. Minority students also perceived greater support from their best friends. In addition, on several indicators of reading motivation and frequency, girls scored higher than boys; this gender difference was particularly apparent in the ethnic majority (European-American) children.

Relations of perceived reading support with reading motivation and frequency were investigated with both correlational and cluster analyses. The former suggested that mother support, versus father or best friend support, was most closely and positively related to children's reading motivations and frequencies. Interestingly, when partial correlations were calculated using reading comprehension test scores as a control variable, relations between perceived support and the motivation and frequency variables generally appeared as strong or stronger than when zero-order correlations were calculated. The cluster analysis and follow-up analyses that were used to profile the four clusters that ultimately formed presented a somewhat different picture. They suggested that there was one group low in support from all three figures of interest, and this group had the most negative reading motivation and frequency characteristics. Conversely, there was a group very high in support from all three figures, which showed the most positive motivation and frequency profile. In addition, there was one group high in best

friend support and average in mother and father support, and one group high in mother and father support and average in best friend support. These two groups did not show clear differences in their motivation and frequency profiles, with their scores on these variables falling generally in between those of the other two groups. It should be emphasized again, however, that the results of the cluster analysis should be considered very tentative, given the small sample size as well as the highly exploratory nature of cluster analysis in general.

Appendix B

Complete Survey Packet for Dissertation Study

The following pages include all measures that were administered to students in the order that they were administered. These measures include the set of reading frequency items (Your Reading Habits survey), the RSS, the set of demographic items (the About You survey) and the modified Perceptions of Reading Motivations Questionnaire.

Circle one: I am a *Girl* *Boy*

Reading Survey - Session 1

I am going to ask you some questions about your reading habits and how much support other people give you for reading. At another time, I am going to give you a survey that focuses on how you feel about reading.

Here are some things you should know about the survey before we start:

- Only people from the University of Maryland will see your answers.
- You should NOT put your name on your survey.
- If there are any questions that you don't want to answer, you may skip them.

Please follow along as I read the questions out loud. For most questions, you just need to circle one of the answer choices. For two questions, I will also ask you to write in an answer. If you have any questions during the survey, please raise your hand.

Before we get to the first set of questions, let's go over what I mean when I ask about certain things:

Books includes both **information books** (books that tell about real people, animals, objects, places, and events) and **story books** (mysteries, fantasies, science-fiction, and all other kinds of made-up stories).

Magazines and newspapers includes paper copies of these kinds of reading materials. It does NOT include any magazines or newspapers that you look at on the internet.

Web sites includes any web sites that you read for information or entertainment. It does NOT include email or instant messaging or game web sites.

Part 1: Your Reading Habits

DIRECTIONS: Think carefully about the following question, and answer honestly. There are no right or wrong answers. Circle one answer choice for each part of the question.

Question: How frequently do you read each of the following in your free time?

A) Information books

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(A couple times a month)</i>	<i>Often</i> <i>(A couple times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
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B) Story books

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(A couple times a month)</i>	<i>Often</i> <i>(A couple times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	---	--	--

C) Magazines and newspapers

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(A couple times a month)</i>	<i>Often</i> <i>(A couple times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
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D) Web Sites

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(A couple times a month)</i>	<i>Often</i> <i>(A couple times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
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 STOP 

Part 2: Reading Support

DIRECTIONS: This section contains questions about the involvement of other people in any reading that you do in your free time. Each question, except the last two, has 3 parts, marked A, B, and C:

Part A will always be about your **Father or main Male Caretaker**. If you do NOT live with your father or another grown-up man who takes care of you, then you should skip Part A of each question.

Part B will always be about your **Mother or main Female Caretaker**. If you do NOT live with your mother or another grown-up woman who takes care of you, then you should skip Part B of each question.

Part C will always be about a good **Friend**. You should think about the friend that you spend the most time with. It should not be your sister or brother. Write the first name of the person you are thinking about here: _____. Always think about this person for Part C of each question.

When answering the questions, think only about the reading that you do in your free time. In other words, do NOT think about the reading that you do for school assignments. Remember, think carefully about each question, and answer honestly, based on your own experiences. Do you have any questions?

1) How frequently do each of these people suggest books for you to read in your free time?

A) Father or male caretaker:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	--	---	--

Example: _____

B) Mother or female caretaker:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	--	---	--

Example: _____

C) Friend:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	--	---	--

Example: _____

2) How frequently do each of these people suggest magazines or newspapers for you to read in your free time?

A) Father or male caretaker:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
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B) Mother or female caretaker:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	--	---	--

C) Friend:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	--	---	--

3) How frequently do each of these people suggest web sites for you to read in your free time?

A) Father or male caretaker:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
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B) Mother or female caretaker:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	--	---	--

C) Friend:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
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4) How frequently do each of these people encourage you to read in your free time?

A) Father or male caretaker:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	--	---	--

B) Mother or female caretaker:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	--	---	--

C) Friend:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	--	---	--

5) How frequently do each of these people read books during their free time?

A) Father or male caretaker:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	--	---	--

B) Mother or female caretaker:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	--	---	--

C) Friend:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
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6) How frequently do each of these people read magazines or newspapers during their free time?

A) Father or male caretaker:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
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B) Mother or female caretaker:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	--	---	--

C) Friend:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
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7) How frequently do each of these people read web sites during their free time?

A) Father or male caretaker:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
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B) Mother or female caretaker:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	--	---	--

C) Friend:

<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(1-2 times a month)</i>	<i>Often</i> <i>(2-3 times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
--------------	--	--	---	--

8) How do each of these people act when they see or hear about you reading in your free time?

A) Father or male caretaker:

<i>Very</i> <i>Unhappy</i>	<i>Sort of</i> <i>Unhappy</i>	<i>Sort of</i> <i>Happy</i>	<i>Very</i> <i>Happy</i>
-------------------------------	----------------------------------	--------------------------------	-----------------------------

B) Mother or female caretaker:

<i>Very</i> <i>Unhappy</i>	<i>Sort of</i> <i>Unhappy</i>	<i>Sort of</i> <i>Happy</i>	<i>Very</i> <i>Happy</i>
-------------------------------	----------------------------------	--------------------------------	-----------------------------

C) Friend:

<i>Very</i> <i>Unhappy</i>	<i>Sort of</i> <i>Unhappy</i>	<i>Sort of</i> <i>Happy</i>	<i>Very</i> <i>Happy</i>
-------------------------------	----------------------------------	--------------------------------	-----------------------------

9) How frequently do you talk with each of these people about things you have read in your free time?

A1) Father or male caretaker:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) *(1-2 times a month)* *(2-3 times a week)* *(Everyday)*

A2) How much do you enjoy talking with him about things you have read? (Skip if you chose *Never* for A1.)

Not at all *Not very much* *A little* *A lot*

B1) Mother or female caretaker:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) *(1-2 times a month)* *(2-3 times a week)* *(Everyday)*

B2) How much do you enjoy talking with her about things you have read? (Skip if you chose *Never* for B1.)

Not at all *Not very much* *A little* *A lot*

C1) Friend:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) *(1-2 times a month)* *(2-3 times a week)* *(Everyday)*

C2) How much do you enjoy talking with him/her about things you have read? (Skip if you chose *Never* for C1.)

Not at all *Not very much* *A little* *A lot*

10) How frequently do you and each of these people read out loud together?

A1) Father or male caretaker:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (1-2 times a month) (2-3 times a week) (Everyday)

Example: _____

A2) How much do you enjoy reading out loud with him? (Skip if you chose *Never* for A1.)

Not at all *Not very much* *A little* *A lot*

B1) Mother or female caretaker:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (1-2 times a month) (2-3 times a week) (Everyday)

Example: _____

B2) How much do you enjoy reading out loud with her? (Skip if you chose *Never* for B1.)

Not at all *Not very much* *A little* *A lot*

C1) Friend:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (1-2 times a month) (2-3 times a week) (Everyday)

Example: _____

C2) How much do you enjoy reading out loud with him/her? (Skip if you chose *Never* for C1.)

Not at all *Not very much* *A little* *A lot*

11) How many books have you received as presents in the past year from each of the following people?

A1) Parents (as a present from both of them):

0 1-3 4-6 7-9 10 or more

A2) How much do you enjoy receiving a book from them as a present? (Skip if you chose 0 for A1.)

Not at all Not very much A little A lot

B1) Father or male caretaker (as a present from him alone):

0 1-3 4-6 7-9 10 or more

B2) How much do you enjoy receiving a book from him as a present? (Skip if you chose 0 for B1.)

Not at all Not very much A little A lot

C1) Mother or female caretaker (as a present from her alone) :

0 1-3 4-6 7-9 10 or more

C2) How much do you enjoy receiving a book from her as a present? (Skip if you chose 0 for C1.)

Not at all Not very much A little A lot

D1) Friend:

0 1-3 4-6 7-9 10 or more

D2) How much do you enjoy receiving a book from him/her as a present? (Skip if you chose 0 for D1.)

Not at all Not very much A little A lot

12) Do you agree with the following statement?

Other people say and do things that lead me to read in my free time. Yes No

If you circled "Yes," who would you say has done this the most? *Circle one:*

- | | |
|-------------------------------|---|
| 1. Father or male caretaker | 5. The friend I had in mind as I did the survey |
| 2. Mother or female caretaker | 6. A different friend |
| 3. Brother | 7. One of my teachers |
| 4. Sister | 8. Someone else (Who?: _____) |

Reading Survey - Session 2

This survey contains a few questions about you, and some more questions about reading.

Here are a few reminders about the survey:

- Only people from the University of Maryland will see your answers.
- You should NOT put your name on your survey.
- If there are any questions that you don't want to answer, you may skip them.
- If you have any questions during the survey, please raise your hand.

Part 1: About You

- 1) Are you a girl or a boy? *Girl* *Boy*
- 2) Do you live with any **older brothers**? *No* *Yes (How many? _____)*
- 3) Do you live with any **younger brothers**? *No* *Yes (How many? _____)*
- 4) Do you live with any **older sisters**? *No* *Yes (How many? _____)*
- 5) Do you live with any **younger sisters**? *No* *Yes (How many? _____)*
- 6) From the list below, circle the grown-ups that you live with **all or most of the time**:
- Mother (or Stepmother)*
- Father (or Stepfather)*
- Grandmother*
- Grandfather*
- Other relative (Who? – for example, “aunt” _____)*
- Other grown-up (Who? _____)*
- 7) From the list below, circle the one that best describes you:
- American Indian/Alaskan Native*
- Asian/Pacific Islander*
- African American*
- White (not of Hispanic origin)*
- Hispanic*
- Other: _____*

Part 2: The Perceptions of Reading Motivations Questionnaire

Now I am going to read you sentences that tell how some students feel about reading. Listen to each sentence and decide whether it talks about a person who is like you or different from you. There are no right or wrong answers. I only want to know how you feel about reading.

For most statements, you should think about the kinds of things you read in your free time, not things you are reading for school.

Here are some ones to try before we start the ones about reading:

Example 1: I like ice cream.

Very	A Little		
Different	Different	A Little	A Lot
From Me	From Me	Like Me	Like Me
1	2	3	4

If the statement is **very different from you**, circle a 1.

If the statement is **a little different from you**, circle a 2.

If the statement is **a little like you**, circle a 3.

If the statement is **a lot like you**, circle a 4.

Example 2: I like spinach.

Very	A Little		
Different	Different	A Little	A Lot
From Me	From Me	Like Me	Like Me
1	2	3	4

Okay, we are ready to start on the ones about reading. Remember, when you give your answers you should think about the things you are reading in your free time. There are no right or wrong answers; I am just interested in YOUR ideas about reading. To give your answer, circle ONE number on each line. The answer lines are right under each statement.

Let's turn the page and start. Please follow along with me while I read each of the statements, and then circle your answer.

1. I have favorite subjects that I like to read about.

Very Different From Me 1	A Little Different From Me 2	A Little Like Me 3	A Lot Like Me 4
-----------------------------------	---------------------------------------	--------------------------	-----------------------

2. I enjoy the challenge of reading a hard book.

Very Different From Me 1	A Little Different From Me 2	A Little Like Me 3	A Lot Like Me 4
-----------------------------------	---------------------------------------	--------------------------	-----------------------

3. I usually have a book to read.

Very Different From Me 1	A Little Different From Me 2	A Little Like Me 3	A Lot Like Me 4
-----------------------------------	---------------------------------------	--------------------------	-----------------------

4. I try to get more answers right than my friends in reading class.

Very Different From Me 1	A Little Different From Me 2	A Little Like Me 3	A Lot Like Me 4
-----------------------------------	---------------------------------------	--------------------------	-----------------------

5. I am a good reader.

Very Different From Me 1	A Little Different From Me 2	A Little Like Me 3	A Lot Like Me 4
-----------------------------------	---------------------------------------	--------------------------	-----------------------

6. I read books that help me learn new ideas.

Very Different From Me 1	A Little Different From Me 2	A Little Like Me 3	A Lot Like Me 4
-----------------------------------	---------------------------------------	--------------------------	-----------------------

7. I know that I will do well in reading next year.

Very Different From Me 1	A Little Different From Me 2	A Little Like Me 3	A Lot Like Me 4
-----------------------------------	---------------------------------------	--------------------------	-----------------------

8. I do not like to read information books.

Very Different From Me	A Little Different From Me	A Little Like Me	A Lot Like Me
1	2	3	4

9. My friends sometimes tell me I am a good reader.

Very Different From Me	A Little Different From Me	A Little Like Me	A Lot Like Me
1	2	3	4

10. I like hard, challenging books.

Very Different From Me	A Little Different From Me	A Little Like Me	A Lot Like Me
1	2	3	4

11. I like to get compliments for my reading.

Very Different From Me	A Little Different From Me	A Little Like Me	A Lot Like Me
1	2	3	4

12. I get excited when I am choosing a book.

Very Different From Me	A Little Different From Me	A Little Like Me	A Lot Like Me
1	2	3	4

13. I like to finish my reading before other students.

Very Different From Me	A Little Different From Me	A Little Like Me	A Lot Like Me
1	2	3	4

14. I read to learn new things.

Very Different From Me	A Little Different From Me	A Little Like Me	A Lot Like Me
1	2	3	4

15. My parents often tell me what a good job I am doing in reading.

Very Different From Me 1	A Little Different From Me 2	A Little Like Me 3	A Lot Like Me 4
-----------------------------------	---------------------------------------	--------------------------	-----------------------

16. I can recognize most words when I read.

Very Different From Me 1	A Little Different From Me 2	A Little Like Me 3	A Lot Like Me 4
-----------------------------------	---------------------------------------	--------------------------	-----------------------

17. I am not a good reader.

Very Different From Me 1	A Little Different From Me 2	A Little Like Me 3	A Lot Like Me 4
-----------------------------------	---------------------------------------	--------------------------	-----------------------

18. It's important for me to choose what I read.

Very Different From Me 1	A Little Different From Me 2	A Little Like Me 3	A Lot Like Me 4
-----------------------------------	---------------------------------------	--------------------------	-----------------------

19. I like hearing the teacher say I read well.

Very Different From Me 1	A Little Different From Me 2	A Little Like Me 3	A Lot Like Me 4
-----------------------------------	---------------------------------------	--------------------------	-----------------------

20. I enjoy reading about important concepts.

Very Different From Me 1	A Little Different From Me 2	A Little Like Me 3	A Lot Like Me 4
-----------------------------------	---------------------------------------	--------------------------	-----------------------

21. I am willing to work hard to read better than my friends.

Very Different From Me 1	A Little Different From Me 2	A Little Like Me 3	A Lot Like Me 4
-----------------------------------	---------------------------------------	--------------------------	-----------------------

22. I enjoy a long, involved story or book.

Very Different From Me	A Little Different From Me	A Little Like Me	A Lot Like Me
1	2	3	4

23. I am happy when someone recognizes my reading.

Very Different From Me	A Little Different From Me	A Little Like Me	A Lot Like Me
1	2	3	4

24. I like reading to know a lot about a science topic.

Very Different From Me	A Little Different From Me	A Little Like Me	A Lot Like Me
1	2	3	4

25. I like being the only one who knows an answer in something we read in class.

Very Different From Me	A Little Different From Me	A Little Like Me	A Lot Like Me
1	2	3	4

26. I do not enjoy choosing a book.

Very Different From Me	A Little Different From Me	A Little Like Me	A Lot Like Me
1	2	3	4

27. I read to learn new information about topics that interest me.

Very Different From Me	A Little Different From Me	A Little Like Me	A Lot Like Me
1	2	3	4

Appendix C

The Preliminary Reading Support Survey (P-RSS)

DIRECTIONS (Read along with your teacher):

This survey contains questions about the involvement of other people in any reading that you do in your free time that is **NOT for school**. So, when answering the questions, do **NOT** think about reading that you do for homework or school projects. Each question, except the last one, has 3 parts, each about a different person:

Part A is always about your **Mother or Female Caretaker**. If you do **NOT** live with your mother or another grown-up woman who takes care of you, then you may skip Part A of each question.

Part B is always about your **Father or Male Caretaker**. If you do **NOT** live with your father or another grown-up man who takes care of you, then you may skip Part B of each question.

Part C is always about your **Best Friend**. You should think about the person around your own age that you consider your best friend or at least a very good friend. It does **NOT** have to be someone you go to school with. Always think about the same person for Part C of each question.

When answering the questions, you should think back as far as the beginning of this school year, in late August. Also, it is important to think about all the different kinds of things that there are to read, including:

Books

Magazines

Websites

And other things...Can you think of some "other things" right now?

I would like you to think carefully about each item, and answer honestly. Your responses should be based on your own experiences. There are no right or wrong answers. Only people from the University of Maryland will see your answers, not your teachers, parents, or friends.

Please follow along as I read the questions out loud, and circle the answers that best match your experience. Do you have any questions before we begin

Question 1 How frequently do each of these people help you pick out things to read?

(Note: Circle your answers for items 1 and 2 of Parts A, B, and C. Return to item 3 of each part after you complete the rest of the survey.)

A) Mother or Female Caretaker

1) Circle one:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (A couple times a month) (A couple times a week) (Everyday)

2) What items has she helped you pick out since the school year started? Circle one or more:

None *Book* *Magazine* *Website* *Other:* _____

3) If you circled *Often* or *Very Often*, list up to 3 titles or topics she has helped you pick out since school started: _____

B) Father or Male Caretaker

1) Circle one:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (A couple times a month) (A couple times a week) (Everyday)

2) What items has he helped you pick out since the school year started? Circle one or more:

None *Book* *Magazine* *Website* *Other:* _____

3) If you circled *Often* or *Very Often*, list up to 3 titles or topics he has helped you pick out since school started: _____

C) Best Friend

1) Circle one:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (A couple times a month) (A couple times a week) (Everyday)

2) What items has he or she helped you pick out since the school year started? Circle one or more:

None *Book* *Magazine* *Website* *Other:* _____

3) If you circled *Often* or *Very Often*, list up to 3 titles or topics he or she has helped you pick out since school started: _____

Question 2 How frequently do each of these people encourage you to read in your free time?

(Note: Circle your answers for items 1 and 2 of Parts A, B, and C. Return to item 3 of each part after you complete the rest of the survey.)

A) Mother or Female Caretaker

1) Circle one:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (A couple times a month) (A couple times a week) (Everyday)

2) What items has she encouraged you to read since the school year started? Circle one or more:

None *Book* *Magazine* *Website* *Other:* _____

3) If you circled *Often* or *Very Often*, list up to 3 titles or topics she has encouraged you to read since school started: _____

B) Father or Male Caretaker

1) Circle one:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (A couple times a month) (A couple times a week) (Everyday)

2) What items has he encouraged you to read since the school year started? Circle one or more:

None *Book* *Magazine* *Website* *Other:* _____

3) If you circled *Often* or *Very Often*, list up to 3 titles or topics he has encouraged you to read since school started: _____

C) Best Friend

1) Circle one:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (A couple times a month) (A couple times a week) (Everyday)

2) What items has he or she encouraged you to read since the school year started? Circle one or more:

None *Book* *Magazine* *Website* *Other:* _____

3) If you circled *Often* or *Very Often*, list up to 3 titles or topics he or she has encouraged you to read since school started: _____

Question 3 How frequently do you and each of these people spend time reading together?

(Note: Circle your answers for items 1 and 2 of Parts A, B, and C. Return to item 3 of each part after you complete the rest of the survey.)

A) Mother or Female Caretaker

1) Circle one:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (A couple times a month) (A couple times a week) (Everyday)

2) What items have you read together since the school year started? Circle one or more:

None *Book* *Magazine* *Website* *Other:* _____

3) If you circled *Often* or *Very Often*, list up to 3 titles or topics you have read together since school started: _____

B) Father or Male Caretaker

1) Circle one:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (A couple times a month) (A couple times a week) (Everyday)

2) What items have you read together since the school year started? Circle one or more:

None *Book* *Magazine* *Website* *Other:* _____

3) If you circled *Often* or *Very Often*, list up to 3 titles or topics you have read together since school started: _____

C) Best Friend

1) Circle one:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (A couple times a month) (A couple times a week) (Everyday)

2) What items have you read together since the school year started? Circle one or more:

None *Book* *Magazine* *Website* *Other:* _____

3) If you circled *Often* or *Very Often*, list up to 3 titles or topics you have read together since school started: _____

Question 4 How frequently do you talk with each of these people about things you have read? (Note: Circle your answers for items 1 and 2 of Parts A, B, and C. Return to item 3 of each part after you complete the rest of the survey.)

<p>A) <u>Mother or Female Caretaker</u></p> <p>1) Circle one:</p> <p style="text-align: center;"> <i>Never</i> <i>Rarely</i> <i>Sometimes</i> <i>Often</i> <i>Very Often</i> <small>(Less than once a month)</small> <small>(A couple times a month)</small> <small>(A couple times a week)</small> <small>(Everyday)</small> </p> <p>2) What items have you talked about with her <u>since the school year started</u>? Circle one or more:</p> <p style="text-align: center;"> <i>None</i> <i>Book</i> <i>Magazine</i> <i>Website</i> <i>Other:</i> _____ </p> <p>3) If you circled <i>Often</i> or <i>Very Often</i>, list up to 3 titles or topics you have talked about with her since school started: _____</p> <p>_____</p>
<p>B) <u>Father or Male Caretaker</u></p> <p>1) Circle one:</p> <p style="text-align: center;"> <i>Never</i> <i>Rarely</i> <i>Sometimes</i> <i>Often</i> <i>Very Often</i> <small>(Less than once a month)</small> <small>(A couple times a month)</small> <small>(A couple times a week)</small> <small>(Everyday)</small> </p> <p>2) What items have you talked about with him <u>since the school year started</u>? Circle one or more:</p> <p style="text-align: center;"> <i>None</i> <i>Book</i> <i>Magazine</i> <i>Website</i> <i>Other:</i> _____ </p> <p>3) If you circled <i>Often</i> or <i>Very Often</i>, list up to 3 titles or topics you have talked about with him since school started: _____</p> <p>_____</p>
<p>C) <u>Best Friend</u></p> <p>1) Circle one:</p> <p style="text-align: center;"> <i>Never</i> <i>Rarely</i> <i>Sometimes</i> <i>Often</i> <i>Very Often</i> <small>(Less than once a month)</small> <small>(A couple times a month)</small> <small>(A couple times a week)</small> <small>(Everyday)</small> </p> <p>2) What items have you talked about with him or her <u>since the school year started</u>? Circle one or more:</p> <p style="text-align: center;"> <i>None</i> <i>Book</i> <i>Magazine</i> <i>Website</i> <i>Other:</i> _____ </p> <p>3) If you circled <i>Often</i> or <i>Very Often</i>, list up to 3 titles or topics you have talked about with him or her since school started: _____</p> <p>_____</p>

Question 5 How frequently do each of these people read during their free time?

(Note: Circle your answers for items 1 and 2 of Parts A, B, and C. Return to item 3 of each part after you complete the rest of the survey.)

A) Mother or Female Caretaker

1) Circle one:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (A couple times a month) (A couple times a week) (Everyday)

2) What items have you noticed her reading since the school year started? Circle one or more:

None *Book* *Magazine* *Website* *Other:* _____

3) If you circled *Often* or *Very Often*, list up to 3 titles or topics you have noticed her reading since school started: _____

B) Father or Male Caretaker

1) Circle one:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (A couple times a month) (A couple times a week) (Everyday)

2) What items have you noticed him reading since the school year started? Circle one or more:

None *Book* *Magazine* *Website* *Other:* _____

3) If you circled *Often* or *Very Often*, list up to 3 titles or topics you have noticed him reading since school started: _____

C) Best Friend

1) Circle one:

Never *Rarely* *Sometimes* *Often* *Very Often*
(Less than once a month) (A couple times a month) (A couple times a week) (Everyday)

2) What items have you noticed him or her reading since the school year started? Circle one or more:

None *Book* *Magazine* *Website* *Other:* _____

3) If you circled *Often* or *Very Often*, list up to 3 titles or topics you have noticed him or her reading since school started: _____

Question 6 How frequently do each of these people try to get you to STOP reading so you can do something else? (Note: Circle one answer for each part.)

A) Mother or Female Caretaker				
<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(A couple times a month)</i>	<i>Often</i> <i>(A couple times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
B) Father or Male Caretaker				
<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(A couple times a month)</i>	<i>Often</i> <i>(A couple times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
C) Best Friend				
<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(A couple times a month)</i>	<i>Often</i> <i>(A couple times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>

Question 7 How frequently do you and each of these people play word games or do word puzzles together? (Note: Circle your answers for item 1 of Parts A, B, and C. Return to item 2 of each part after you complete the rest of the survey.)

A) Mother or Female Caretaker				
1) Circle one:				
<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(A couple times a month)</i>	<i>Often</i> <i>(A couple times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
2) If you circled <i>Often</i> or <i>Very Often</i> , list up to 3 word games or puzzles you have played with her since school started: _____				
B) Father or Male Caretaker				
1) Circle one:				
<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(A couple times a month)</i>	<i>Often</i> <i>(A couple times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
2) If you circled <i>Often</i> or <i>Very Often</i> , list up to 3 word games or puzzles you have played with him since school started: _____				
C) Best Friend				
1) Circle one:				
<i>Never</i>	<i>Rarely</i> <i>(Less than once a month)</i>	<i>Sometimes</i> <i>(A couple times a month)</i>	<i>Often</i> <i>(A couple times a week)</i>	<i>Very Often</i> <i>(Everyday)</i>
2) If you circled <i>Often</i> or <i>Very Often</i> , list up to 3 word games or puzzles you have played with him or her since school started: _____				

Question 8 How many books have each of these people given you for presents in the last year? (Note: Circle your answers for item 1 of Parts A, B, and C. Return to item 2 of each part after you complete the rest of the survey.)

<p>A) Mother or Female Caretaker</p> <p>1) Circle one: 0 1-3 4-6 7-9 10 or more</p> <p>2) Write down up to 3 titles or topics you can remember: _____</p> <p>_____</p> <p>_____</p>
<p>B) Father or Male Caretaker</p> <p>1) Circle one: 0 1-3 4-6 7-9 10 or more</p> <p>2) Write down up to 3 titles or topics you can remember: _____</p> <p>_____</p> <p>_____</p>
<p>C) Best Friend</p> <p>1) Circle one: 0 1-3 4-6 7-9 10 or more</p> <p>2) Write down up to 3 titles or topics you can remember: _____</p> <p>_____</p> <p>_____</p>

Question 9 How frequently do you read each of the following in your free time? (Note: Circle one answer for each part.)

<p>A) Books</p> <table style="width: 100%; text-align: center;"> <tr> <td><i>Never</i></td> <td><i>Rarely</i> <small>(Less than once a month)</small></td> <td><i>Sometimes</i> <small>(A couple times a month)</small></td> <td><i>Often</i> <small>(A couple times a week)</small></td> <td><i>Very Often</i> <small>(Everyday)</small></td> </tr> </table>	<i>Never</i>	<i>Rarely</i> <small>(Less than once a month)</small>	<i>Sometimes</i> <small>(A couple times a month)</small>	<i>Often</i> <small>(A couple times a week)</small>	<i>Very Often</i> <small>(Everyday)</small>
<i>Never</i>	<i>Rarely</i> <small>(Less than once a month)</small>	<i>Sometimes</i> <small>(A couple times a month)</small>	<i>Often</i> <small>(A couple times a week)</small>	<i>Very Often</i> <small>(Everyday)</small>	
<p>B) Magazines</p> <table style="width: 100%; text-align: center;"> <tr> <td><i>Never</i></td> <td><i>Rarely</i> <small>(Less than once a month)</small></td> <td><i>Sometimes</i> <small>(A couple times a month)</small></td> <td><i>Often</i> <small>(A couple times a week)</small></td> <td><i>Very Often</i> <small>(Everyday)</small></td> </tr> </table>	<i>Never</i>	<i>Rarely</i> <small>(Less than once a month)</small>	<i>Sometimes</i> <small>(A couple times a month)</small>	<i>Often</i> <small>(A couple times a week)</small>	<i>Very Often</i> <small>(Everyday)</small>
<i>Never</i>	<i>Rarely</i> <small>(Less than once a month)</small>	<i>Sometimes</i> <small>(A couple times a month)</small>	<i>Often</i> <small>(A couple times a week)</small>	<i>Very Often</i> <small>(Everyday)</small>	
<p>C) Websites</p> <table style="width: 100%; text-align: center;"> <tr> <td><i>Never</i></td> <td><i>Rarely</i> <small>(Less than once a month)</small></td> <td><i>Sometimes</i> <small>(A couple times a month)</small></td> <td><i>Often</i> <small>(A couple times a week)</small></td> <td><i>Very Often</i> <small>(Everyday)</small></td> </tr> </table>	<i>Never</i>	<i>Rarely</i> <small>(Less than once a month)</small>	<i>Sometimes</i> <small>(A couple times a month)</small>	<i>Often</i> <small>(A couple times a week)</small>	<i>Very Often</i> <small>(Everyday)</small>
<i>Never</i>	<i>Rarely</i> <small>(Less than once a month)</small>	<i>Sometimes</i> <small>(A couple times a month)</small>	<i>Often</i> <small>(A couple times a week)</small>	<i>Very Often</i> <small>(Everyday)</small>	

Appendix D

Scales of the Perceived Reading Motivations Questionnaire (PRMQ)

Autonomy

I usually have a book to read.

I get excited when I am choosing a book.

It's important for me to choose what I read.

I do not enjoy choosing a book.*

Efficacy/challenge

I enjoy the challenge of reading a hard book.

I am a good reader.

I know that I will do well in reading next year.

I like hard, challenging books.

I can recognize most words when I read.

I am not a good reader.*

I enjoy a long, involved story or book.

Knowledge goals/interest

I like to read about animals or things I have observed in science.**

I read books that help me learn new ideas.

I do not like to read information books.*

I read to learn new things.

I often read about things I observe in science.**

I enjoy reading about important concepts.

I like reading to know a lot about a science topic.

I read to learn new information about topics that interest me.

I have favorite subjects that I like to read about.

Competition

I try to get more answers right than my friends in reading class.

I like to finish my reading before other students.

I am willing to work hard to read better than my friends.

I like being the only one who knows an answer in something we read in class.

Recognition

My friends sometimes tell me I am a good reader.

I like to get compliments for my reading.

My parents often tell me what a good job I am doing in reading.

I like hearing the teacher say I read well.

I am happy when someone recognizes my reading.

Note. The response options were Very different from me (1), A little different from me (2), A little like me (3), and A lot like me (4). * indicates items that were reverse-coded.

** indicates items employed in the pilot but not in the dissertation study.

Appendix E

Interitem Correlation Matrix for the 34 Main Items of the Reading Support Survey

Variable	1	2	3	4	5	6	7	8	9
1. Fa suggests books	—								
2. Mo suggest books	.65***	—							
3. Fr suggests books	.32***	.29***	—						
4. Fa suggests mags./news.	.38***	.36***	.19***	—					
5. Mo suggests mags./news.	.32***	.39***	.24***	.59***	—				
6. Fr suggests mags./news.	.29***	.30***	.47***	.39***	.35***	—			
7. Fa suggests web sites	.33***	.30***	.24***	.35***	.35***	.25***	—		
8. Mo suggests web sites	.15**	.20***	.22***	.20***	.36***	.26***	.61***	—	
9. Fr suggests web sites	.21***	.24***	.26***	.16**	.25***	.43***	.39***	.36***	—
10. Fa encrgs. reading	.65***	.50***	.37***	.30***	.26***	.28***	.38***	.24***	0.25***
11. Mo encrgs. reading	.44***	.57***	.31***	.21***	.22***	.22***	.27***	.27***	0.24***
12. Fr encrgs. reading	.30***	.32***	.56***	.16**	.20***	.43***	.27***	.21***	.31***

Note. Fa=father, Mo=mother, Fr=friend. Mags./news.=magazines and newspapers. * $p \leq .05$. ** $p \leq .01$.

*** $p \leq .001$. Gives books as presents abbreviated to gives books. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Variable	1	2	3	4	5	6	7	8	9
13. Fa reads books	.29***	.19***	.18***	.11*	.10*	.13*	.24***	.19***	.08
14. Mo reads books	.19***	.25***	.13*	.14**	.13*	.11*	.12*	.07	.17**
15. Fr reads books	.22***	.21***	.33***	.01	.06	.19***	.18***	.17**	.14**
16. Fa reads mags./news.	.15**	.16**	-.01	.36***	.19***	.15**	.24***	.15**	.14**
17. Mo reads mags./news.	.18***	.19***	.10	.20***	.25***	.20***	.17**	.19***	.22***
18. Fr reads mags./news.	.28***	.27***	.26***	.26***	.28***	.47***	.18***	.10	.30***
19. Fa reads web sites	.19***	.17**	.18***	.12*	.25***	.08	.43***	.32***	.22***
20. Mo reads web sites	.12*	.19***	.15**	.18***	.24***	.17**	.30***	.46***	.25***
21. Fr reads web sites	.23***	.26***	.19***	.23***	.20***	.29***	.27***	.25***	.48***
22. Fa happy about reading	.24***	.14**	.13*	.06	.05	.11*	.16**	.15**	.06
23. Mo happy about reading	.19***	.23***	.14*	.05	.07	.07	.12*	.15**	.07
24. Fr happy about reading	.17**	.23***	.27***	.00	.13*	.19***	.06	.16**	.19***

Note. Fa=father, Mo=mother, Fr=friend. Mags./news.=magazines and newspapers. Encrgs.=encourages.

Gives books as presents abbreviated to gives books. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Variable	1	2	3	4	5	6	7	8	9
25. Fa talks about reading	.38***	.33***	.23***	.32***	.20***	.23***	.37***	.23***	.21***
26. Mo talks about reading	.27***	.36***	.21***	.21***	.20***	.19***	.27***	.24***	.19***
27. Fr talks about reading	.23***	.25***	.42***	.12*	.21***	.35***	.28***	.24***	.37***
28. Fa reads aloud	.41***	.32***	.23***	.13*	.20***	.10	.36***	.29***	.09
29. Mo reads aloud	.32***	.39***	.20***	.17**	.25***	.04	.22***	.21***	.10*
30. Fr reads aloud	.23***	.24***	.38***	.05	.09	.28***	.13*	.15**	.17**
31. Parents give books	.34***	.33***	.19***	.23***	.21***	.10*	.20***	.17*	.17**
32. Fa gives books	.41***	.24***	.25***	.21***	.18**	.12*	.29***	.14*	.16**
33. Mo gives books	.25***	.32***	.11*	.17**	.17**	.08	.17**	.18***	.13*
34. Fr gives books	.22***	.24***	.35***	.20***	.18***	.27***	.17**	.18***	.15**

Note. Fa=father, Mo=mother, Fr=friend. Mags./news.=magazines and newspapers. Encrgs.=encourages.

Gives books as presents abbreviated to gives books. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Variable	10	11	12	13	14	15	16	17	18
10. Fa encrgs. reading	—								
11. Mo encrgs. reading	.66***	—							
12. Fr encrgs. reading	.39***	.39***	—						
13. Fa reads books	.35***	.30***	.18***	—					
14. Mo reads books	.29***	.34***	.11*	.44***	—				
15. Fr reads books	.22***	.29***	.37***	.12*	.11*	—			
16. Fa reads mags./news.	.13*	.09	.09	.18**	.21***	.19***	—		
17. Mo reads mags./news.	.15**	.17**	.15**	.13*	.25***	.17**	.42***	—	
18. Fr reads mags./news.	.24***	.25***	.36***	.03	.23***	.27***	.10*	.23***	—
19. Fa reads web sites	.24***	.16**	.09	.21***	.18***	.06	.17**	.25***	.06
20. Mo reads web sites	.10*	.16**	.14**	.04	.11*	.12*	.13*	.18**	.07
21. Fr reads web sites	.17**	.20***	.19***	.06	.16**	.24***	.12*	.18**	.33***

Note. Fa=father, Mo=mother, Fr=friend. Mags./news.=magazines and newspapers. Encrgs.=encourages.

Gives books as presents abbreviated to gives books. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Variable	10	11	12	13	14	15	16	17	18
22. Fa happy about reading	.40***	.25***	.19***	.26***	.10	.08	.02	.11*	-.01
23. Mo happy about reading	.32***	.42***	.14**	.26***	.26***	.15**	.13*	.21***	.12*
24. Fr happy about reading	.13*	.16**	.37***	.04	.05	.35***	.01	.13*	.25***
25. Fa talks about reading	.43***	.24***	.23***	.28***	.20***	.17**	.23***	.23***	.13*
26. Mo talks about reading	.29***	.38***	.21***	.18***	.20***	.23***	.16**	.20***	.18***
27. Fr talks about reading	.29***	.24***	.48***	.19***	.22***	.41***	.14*	.22***	.28***
28. Fa reads aloud	.41***	.26***	.27***	.23***	.16**	.16**	.05	.12*	.15**
29. Mo reads aloud	.30***	.34***	.25***	.09	.14*	.19***	.11*	.09	.10
30. Fr reads aloud	.28***	.23***	.42***	.08	.08	.21***	.02	.02	.26***
31. Parents give books	.30***	.27***	.22***	.13*	.21***	.13*	.18***	.11*	.15**
32. Fa gives books	.38***	.23***	.18***	.21***	.17**	.14*	.12*	.14**	.18***
33. Mo gives books	.22***	.26***	.17**	.11*	.18***	.12*	.15**	.13*	.09
34. Fr gives books	.19***	.19***	.40***	.07	.04	.18***	.14*	.12*	.26***

Note. Fa=father, Mo=mother, Fr=friend. Mags./news.=magazines and newspapers. Encrgs.=encourages.

Gives books as presents abbreviated to gives books. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Variable	19	20	21	22	23	24	25	26	27
19. Fa reads web sites	—								
20. Mo reads web sites	.50***	—							
21. Fr reads web sites	.29***	.34***	—						
22. Fa happy about reading	.10*	.05	.00	—					
23. Mo happy about reading	.15**	.11*	.05	.50***	—				
24. Fr happy about reading	.08	.11*	.21***	.23***	.19***	—			
25. Fa talks about reading	.16**	.13*	.14**	.29***	.14*	.15**	—		
26. Mo talks about reading	.16**	.19***	.17**	.17**	.25***	.12*	.68***	—	
27. Fr talks about reading	.22***	.23***	.21***	.16**	.05	.34***	.36***	.35***	—

Note. Fa=father, Mo=mother, Fr=friend. Mags./news.=magazines and newspapers. Encrgs.=encourages.

Gives books as presents abbreviated to gives books. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Variable	19	20	21	22	23	24	25	26	27
28. Fa reads aloud	.19***	.21***	.08	.26***	.23***	.15**	.38***	.33***	.26***
29. Mo reads aloud	.11*	.22***	.08	.13*	.20***	.19***	.31***	.43***	.31***
30. Fr reads aloud	-.02	.07	.07	.12*	.10	.24***	.16**	.20***	.37***
31. Parents give books	.10*	.16**	.13*	.14**	.17**	.07	.27***	.30***	.28***
32. Fa gives books	.19***	.05	.08	.16**	.11*	.13*	.34***	.24***	.28***
33. Mo gives books	.08	.16**	.12*	.11*	.13*	.09	.23***	.29***	.25***
34. Fr gives books	-.01	.08	.02	.10*	.15**	.25***	.17**	.17**	.25***

Note. Fa=father, Mo=mother, Fr=friend. Mags./news.=magazines and newspapers. Encrgs.=encourages.

Gives books as presents abbreviated to gives books. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Variable	28	29	30	31	32	33	34
28. Fa reads aloud	—						
29. Mo reads aloud	.56***	—					
30. Fr reads aloud	.34***	.41***	—				
31. Parents give books	.25***	.32***	.18***	—			
32. Fa gives books	.29***	.28***	.19***	.62***	—		
33. Mo gives books	.18***	.36***	.13*	.67***	.50***	—	
34. Fr gives books	.27***	.31***	.38***	.36***	.40***	.33***	—

Note. Fa=father, Mo=mother, Fr=friend. Mags./news.=magazines and newspapers.

Encrgs.=encourages. Gives books as presents abbreviated to gives books. * $p \leq .05$.

** $p \leq .01$. *** $p \leq .001$.

Appendix F

Matrices for Alternative Extractions Considered for Test of Hypothesis 1

Table F1

Factor Loadings Obtained with Extraction of Six Factors Using PAF (Without Rotation)

Variable	Factor					
	1	2	3	4	5	6
Father suggests books	.65				-.29	
Mother suggests books	.64				-.25	
Friend suggests books	.56		-.32			
Father suggests magazines	.45		.24		-.46	
Mother suggests magazines	.49	.24	.22		-.25	-.22
Friend suggests magazines	.51	.39	-.24		-.26	
Father suggests web sites	.56	.24	.33			
Mother suggests web sites	.49	.30	.28		.31	
Friend suggests web sites	.47	.38				.21
Father encourages reading	.69			.35		
Mother encourages reading	.62			.32		
Friend encourages reading	.61		-.43			
Father reads books	.35			.30		
Mother reads books	.35					.28
Friend reads books	.40		-.29			
Friend reads magazines/newspapers	.45	.22	-.26		-.22	
Father reads web sites	.36	.24	.39		.26	
Mother reads web sites	.36	.30	.30		.32	
Friend reads web sites	.39	.38				.24

Note. Loadings $\leq .19$ suppressed for clarity. This is the final 6-factor solution obtained after four items without any loadings $\geq .30$ were eliminated.

Table F1, continued

Factor Loadings Obtained with Extraction of Six Factors Using PAF (Without Rotation)

Variable	Factor					
	1	2	3	4	5	6
Father happy about reading	.32	-.21		.34		
Mother happy about reading	.35	-.21		.36		
Friend happy about reading	.36		-.32			
Friend talks about reading	.56		-.26		.22	
Father reads aloud	.53	-.22			.22	-.36
Mother reads aloud	.51	-.28			.20	-.33
Friend reads aloud	.45		-.40			-.22
Parents give books as presents	.53	-.43		-.46		.25
Father gives books as presents	.51	-.35		-.29		
Mother gives books as presents	.45	-.38		-.42		.21
Friend gives books as presents	.46		-.28	-.26		

Note. Loadings $\leq .19$ suppressed for clarity. This is the final 6-factor solution obtained after four items without any loadings $\geq .30$ were eliminated.

Table F2

Pattern Matrix Obtained with Extraction of Six Factors Using PAF and Direct Oblimin

Rotation

Variable	Factor					
	1	2	3	4	5	6
Father suggests books	.44	.44				
Mother suggests books	.35	.41				
Friend suggests books			-.57			
Father suggests magazines		.74				
Mother suggests magazines		.59			.26	
Friend suggests magazines		.42	-.50			
Father suggests web sites		.22			.58	
Mother suggests web sites					.67	
Friend suggests web sites			-.32		.35	.27
Father encourages reading	.68	.28				
Mother encourages reading	.60					
Friend encourages reading			-.70			
Father reads books	.51					
Mother reads books	.42					.20
Friend reads books			-.49			
Friend reads magazines/newspapers		.28	-.45			
Father reads web sites					.62	
Mother reads web sites					.66	
Friend reads web sites			-.21		.35	.32

Note. Loadings $\leq .19$ suppressed. This is the final 6-factor solution obtained after four items without any loadings $\geq .30$ were eliminated.

Table F2, continued

*Pattern Matrix Obtained with Extraction of Six Factors Using PAF and Direct Oblimin**Rotation*

Variable	Factor					
	1	2	3	4	5	6
Father happy about reading	.49					
Mother happy about reading	.55					
Friend happy about reading			-.51			
Father talks about reading			-.55			
Father reads aloud	.23				.22	-.52
Mother reads aloud				-.24		-.50
Friend reads aloud			-.55			-.31
Parents give books as presents				-.89		
Father gives books as presents				-.65		
Mother gives books as presents				-.80		
Friend gives books as presents			-.39	-.34		-.21

Note. Loadings $\leq .19$ suppressed. This is the final 6-factor solution obtained after four items without any loadings $\geq .30$ were eliminated.

Table F3

Structure Matrix Obtained with Extraction of Four Factors Using PAF and Direct

Oblimin Rotation

Variable	Factor					
	1	2	3	4	5	6
Father suggests books	.57	.55	-.33	-.42	.22	
Mother suggests books	.51	.54	-.37	-.41	.26	
Friend suggests books	.29	.31	-.64	-.24	.24	
Father suggests magazines		.75		-.26	.27	
Mother suggests magazines		.65	-.22	-.25	.40	
Friend suggests magazines		.55	-.57		.26	
Father suggests web sites	.32	.39	-.26	-.26	.66	
Mother suggests web sites	.22	.25	-.27	-.20	.70	
Friend suggests web sites		.31	-.44	-.21	.48	.26
Father encourages reading	.76	.42	-.38	-.36	.26	
Mother encourages reading	.69	.32	-.38	-.33	.25	
Friend encourages reading	.32	.27	-.75	-.27	.21	
Father reads books	.52				.21	
Mother reads books	.45			-.25		
Friend reads books	.26		-.51			
Friend reads magazines/newspapers		.41	-.51	-.20		
Father reads web sites	.29				.63	
Mother reads web sites					.65	
Friend reads web sites		.28	-.33		.46	.31

Note. Loadings $\leq .19$ suppressed. This is the final 6-factor solution obtained after four items without any loadings $\geq .30$ were eliminated.

Table F3, continued

Structure Matrix Obtained with Extraction of Six Factors Using PAF and Direct Oblimin

Rotation

Variable	Factor					
	1	2	3	4	5	6
Father happy about reading	.50					
Mother happy about reading	.55					
Friend happy about reading			-.50			
Friend talks about reading	.26		-.63	-.36	.35	
Father reads aloud	.41		-.30	-.33	.32	-.56
Mother reads aloud	.30		-.32	-.44	.25	-.55
Friend reads aloud			-.57	-.25		-.36
Parents give books as presents	.28	.22	-.22	-.87		
Father gives books as presents	.31	.23	-.25	-.69		
Mother gives books as presents	.22			-.76		
Friend gives books as presents		.24	-.47	-.46		-.29

Note. Loadings $\leq .19$ suppressed. This is the final 6-factor solution obtained after four items without any loadings $\geq .30$ were eliminated.

Table F4

Factor Correlation Matrix Obtained with Extraction of Six Factors Using PAF and

Direct Oblimin Rotation

Factor	1	2	3	4	5	6
1	—					
2	.18	—				
3	-.30	-.29	—			
4	-.33	-.27	.31	—		
5	.29	.26	-.27	-.24	—	
6	-.12	.03	.07	.18	.04	—

Table F5

Factor Loadings Obtained with Extraction of Five Factors Using PAF (Without Rotation)

Variable	Factor				
	1	2	3	4	5
Father suggests books	.66				-.30
Mother suggests books	.64				-.25
Friend suggests books	.56		-.31		
Father suggests magazines	.45		.24		-.46
Mother suggests magazines	.48	.22	.22		-.25
Friend suggests magazines	.51	.41	-.21		-.27
Father suggests web sites	.57	.22	.35		
Mother suggests web sites	.48	.29	.29		.29
Friend suggests web sites	.46	.38			
Father encourages reading	.70	-.22		.34	
Mother encourages reading	.62			.30	
Friend encourages reading	.60		-.43		
Father reads books	.36			.29	
Mother reads books	.35				
Friend reads books	.39		-.28		
Friend reads magazines/newspapers	.44	.24	-.25		-.22
Father reads web sites	.35	.22	.41		.26
Mother reads web sites	.36	.30	.31		.31
Friend reads web sites	.38	.37			

Note. Loadings $\leq .19$ suppressed for clarity. This is the final 5-factor solution obtained after three items without any loadings $\geq .30$ were eliminated.

Table F5, continued

Factor Loadings Obtained with Extraction of Five Factors Using PAF (Without Rotation)

Variable	Factor				
	1	2	3	4	5
Father happy about reading	.33	-.23		.34	
Mother happy about reading	.34	-.22		.35	
Friend happy about reading	.36		-.31		
Father talks about reading	.52				
Friend talks about reading	.57		-.24		.22
Father reads aloud	.53	-.21			
Mother reads aloud	.50	-.25			
Friend reads aloud	.44		-.39		
Parents give books as presents	.52	-.39		-.45	
Father gives books as presents	.52	-.35		-.32	
Mother gives books as presents	.44	-.36		-.43	
Friend gives books as presents	.45		-.30	-.27	

Note. Loadings $\leq .19$ suppressed for clarity. This is the final 5-factor solution obtained after three items without any loadings $\geq .30$ were eliminated.

Table F6

Pattern Matrix Obtained with Extraction of Five Factors Using PAF and Direct Oblimin

Rotation

Variable	Factor				
	1	2	3	4	5
Father suggests books	.50				-.38
Mother suggests books	.40				-.37
Friend suggests books			-.55		
Father suggests magazines					-.66
Mother suggests magazines		.26			-.49
Friend suggests magazines			-.45		-.49
Father suggests web sites		.57			
Mother suggests web sites		.66			
Friend suggests web sites		.39	-.28		-.21
Father encourages reading	.74				-.23
Mother encourages reading	.60				
Friend encourages reading			-.70		
Father reads books	.50				
Mother reads books	.35				
Friend reads books			-.48		
Friend reads magazines/newspapers			-.42		-.37
Father reads web sites		.63			
Mother reads web sites		.67			
Friend reads web sites		.38			-.23

Note. Loadings $\leq .19$ suppressed. Bold text indicates factor assignments. This is the final 5-factor solution obtained after three items without any loadings $\geq .30$ were eliminated.

Table F6, continued

*Pattern Matrix Obtained with Extraction of Five Factors Using PAF and Direct Oblimin**Rotation*

Variable	Factor				
	1	2	3	4	5
Father happy about reading	.53				
Mother happy about reading	.55				
Friend happy about reading			-.51		
Father talks about reading	.31			-.20	
Friend talks about reading		.21	-.53		
Father reads aloud	.34			-.26	
Mother reads aloud				-.42	
Friend reads aloud			-.55		
Parents give books as presents				-.80	
Father gives books as presents				-.65	
Mother gives books as presents				-.74	
Friend gives books as presents			-.40	-.43	

Note: Loadings $\leq .19$ suppressed. Bold text indicates factor assignments. This is the final 5-factor solution obtained after three items without any loadings $\geq .30$ were eliminated.

Table F7

Structure Matrix Obtained with Extraction of Five Factors Using PAF and Direct Oblimin Rotation

Variable	Factor				
	1	2	3	4	5
Father suggests books	.62	.23	-.31	-.44	-.48
Mother suggests books	.54	.27	-.35	-.42	-.48
Friend suggests books	.32	.26	-.63	-.24	-.29
Father suggests magazines	.21	.30		-.28	-.70
Mother suggests magazines	.22	.42		-.27	-.58
Friend suggests magazines		.29	-.55		-.59
Father suggests web sites	.38	.67	-.24	-.28	-.32
Mother suggests web sites	.27	.69	-.26	-.22	
Friend suggests web sites		.49	-.40		-.37
Father encourages reading	.80	.27	-.36	-.38	-.35
Mother encourages reading	.67	.26	-.37	-.31	-.27
Friend encourages reading	.34	.23	-.75	-.27	-.25
Father reads books	.50	.21			
Mother reads books	.39				
Friend reads books	.25		-.51		
Friend reads magazines/newspapers			-.49		-.46
Father reads web sites	.28	.62			
Mother reads web sites		.65			
Friend reads web sites		.46	-.29		-.35

Note: Loadings $\leq .19$ suppressed. This is the final 5-factor solution obtained after three items without any loadings $\geq .30$ were eliminated.

Table F7, continued

*Structure Matrix Obtained with Extraction of Five Factors Using PAF and Direct**Oblimin Rotation*

Variable	Factor				
	1	2	3	4	5
Father happy about reading	.52				
Mother happy about reading	.53				
Friend happy about reading	.20		-.51		
Father talks about reading	.45	.31	-.26	-.38	-.23
Friend talks about reading	.28	.37	-.62	-.34	
Father reads aloud	.51	.31	-.31	-.43	
Mother reads aloud	.40	.24	-.33	-.53	
Friend reads aloud	.25		-.57	-.31	
Parents give books as presents	.29		-.21	-.79	
Father gives books as presents	.34		-.24	-.69	
Mother gives books as presents	.23			-.72	
Friend gives books as presents			-.48	-.50	

Note: Loadings $\leq .19$ suppressed. This is the final 5-factor solution obtained after three items without any loadings $\geq .30$ were eliminated.

Table F8

*Factor Correlation Matrix Obtained with Extraction of Five Factors Using PAF and**Direct Oblimin Rotation*

Factor	1	2	3	4	5
1	—				
2	.31	—			
3	-.32	-.26	—		
4	-.38	-.22	.29	—	
5	-.15	-.27	.24	.18	—

Table F9

Factor Loadings Obtained with Extraction of Three Factors Using PAF (Without Rotation)

Variable	Factor		
	1	2	3
Father suggests books	.64		
Mother suggests books	.64		
Friend suggests books	.54		-.37
Father suggests magazines	.45		.21
Mother suggests magazines	.48	.24	
Friend suggests magazines	.50	.38	-.25
Father suggests web sites	.57	.24	.28
Mother suggests web sites	.48	.28	.20
Friend suggests web sites	.47	.40	
Father encourages reading	.68	-.21	
Mother encourages reading	.61		
Friend encourages reading	.59		-.47
Father reads books	.36		
Mother reads books	.36		
Friend reads books	.40		-.26
Father reads magazines/newspapers	.29		.23
Mother reads magazines/newspapers	.35		
Friend reads magazines/newspapers	.44	.23	-.26
Father reads web sites	.36	.25	.35
Mother reads web sites	.36	.30	.23
Friend reads web sites	.39	.40	

Note: Loadings $\leq .19$ suppressed for clarity.

Table F9, continued

Factor Loadings Obtained with Extraction of Three Factors Using PAF (Without Rotation)

Variable	Factor		
	1	2	3
Father happy about reading	.32	-.23	
Mother happy about reading	.35	-.20	
Friend happy about reading	.35		-.32
Father talks about reading	.56		
Mother talks about reading	.54		
Friend talks about reading	.57		-.24
Father reads aloud	.52	-.25	
Mother reads aloud	.51	-.30	
Friend reads aloud	.43		-.42
Parents give books as presents	.50	-.31	
Father gives books as presents	.50	-.30	
Mother gives books as presents	.43	-.28	
Friend gives books as presents	.44		-.28

Note: Loadings $\leq .19$ suppressed for clarity.

Table F10

Pattern Matrix Obtained with Extraction of Three Factors Using PAF and Direct

Oblimin Rotation

Variable	Factor		
	1	2	3
Father suggests books	.53		
Mother suggests books	.46		
Friend suggests books			-.61
Father suggests magazines		.44	
Mother suggests magazines		.48	
Friend suggests magazines		.33	-.56
Father suggests web sites		.58	
Mother suggests web sites		.53	
Friend suggests web sites		.48	-.33
Father encourages reading	.59		
Mother encourages reading	.50		
Friend encourages reading			-.72
Father reads books	.38		
Mother reads books	.31		
Friend reads books			-.43
Father reads magazines/newspapers		.34	
Mother reads magazines/newspapers		.37	
Friend reads magazines/newspapers			-.49
Father reads web sites		.55	
Mother reads web sites		.52	
Friend reads web sites		.50	-.23

Note: Loadings $\leq .19$ suppressed. Bold text indicates factor assignments.

Table F10, continued

Pattern Matrix Obtained with Extraction of Three Factors Using PAF and Direct

Oblimin Rotation

Variable	Factor		
	1	2	3
Father happy about reading	.41		
Mother happy about reading	.42		
Friend happy about reading			-.47
Father talks about reading	.50		
Mother talks about reading	.48		
Friend talks about reading			-.49
Father reads aloud	.54		
Mother reads aloud	.56		
Friend reads aloud	.21	-.21	-.54
Parents give books as presents	.60		
Father gives books as presents	.58		
Mother gives books as presents	.54		
Friend gives books as presents	.29		-.40

Note: Loadings $\leq .19$ suppressed. Bold text indicates factor assignments.

Table F11

Structure Matrix Obtained with Extraction of Three Factors Using PAF and Direct

Oblimin Rotation

Variable	Factor		
	1	2	3
Father suggests books	.64	.38	-.38
Mother suggests books	.60	.41	-.41
Friend suggests books	.35	.27	-.66
Father suggests magazines	.33	.50	-.21
Mother suggests magazines	.32	.55	-.28
Friend suggests magazines		.45	-.60
Father suggests web sites	.42	.65	-.27
Mother suggests web sites	.31	.58	-.26
Friend suggests web sites		.54	-.43
Father encourages reading	.69	.38	-.40
Mother encourages reading	.60	.34	-.39
Friend encourages reading	.38	.24	-.76
Father reads books	.40	.25	
Mother reads books	.36	.28	
Friend reads books	.26		-.47
Father reads magazines/newspapers	.24	.37	
Mother reads magazines/newspapers	.25	.41	
Friend reads magazines/newspapers	.21	.32	-.53
Father reads web sites	.25	.55	
Mother reads web sites		.52	
Friend reads web sites		.51	-.33

Note: Loadings $\leq .19$ suppressed.

Table F11, continued

Structure Matrix Obtained with Extraction of Three Factors Using PAF and Direct

Oblimin Rotation

Variable	Factor		
	1	2	3
Father happy about reading	.40		
Mother happy about reading	.41		
Friend happy about reading	.21		-.48
Father talks about reading	.57	.38	-.26
Mother talks about reading	.55	.34	-.28
Friend talks about reading	.40	.34	-.59
Father reads aloud	.58	.24	-.30
Mother reads aloud	.58		-.32
Friend reads aloud	.35		-.56
Parents give books as presents	.59	.21	-.24
Father gives books as presents	.59	.20	-.26
Mother gives books as presents	.53		
Friend gives books as presents	.40		-.48

Note: Loadings $\leq .19$ suppressed.

Table F12

Factor Correlation Matrix Obtained with Extraction of Three Factors Using PAF and

Direct Oblimin Rotation

Factor	1	2	3
1	—		
2	.38	—	
3	-.40	-.31	—

Appendix G

Zero-order Correlations between the Reading Support, Motivation, Frequency, and Achievement Variables

Variable	1	2	3	4	5	6	7	8
1. Parent gen./book support	—							
2. Other media support	.50***	—						
3. Friend support	.51***	.42***	—					
4. Books as presents	.46***	.29***	.35***	—				
5. Autonomy	.28***	.08	.21***	.14*	—			
6. Efficacy/challenge	.32***	.15*	.28***	.16*	.54***	—		
7. Knowledge goals/ interest	.42***	.27***	.37***	.20***	.44***	.42***	—	
8. Competition	.03	.04	-.01	.05	.07	.11	.09	—
9. Recognition	.40***	.24***	.31***	.23***	.48***	.49***	.45***	.33***
10. Information books	.23***	.13*	.29***	.18**	.12*	.19**	.36***	-.01
11. Story books	.19**	.06	.18**	.09	.28***	.34***	.15*	-.01
12. Mags./news.	.23***	.30***	.21***	.19**	-.04	-.02	.12	.05
13. Web sites	.12*	.43***	.15*	.16**	.01	.07	.14*	-.05
14. WJ III Fluency	.06	.07	.07	-.06	.24***	.43***	.09	.03
15. DIBELS ORF	.01	-.01	-.01	-.14*	.26***	.46***	.11	.06
16. Reading grade	.21	.07	.19	.04	.31**	.47***	.08	.27*

Note. For correlations involving variable 16 (second semester reading grade), N ranges from 80-94; for all other correlations, N ranges from 245-298. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Variable	9	10	11	12	13	14	15	16
9. Recognition	—							
10. Information books	.17**	—						
11. Story books	.19**	.09	—					
12. Mags./news.	.02	.18**	-.01	—				
13. Web sites	-.01	.16**	-.04	.21***	—			
14. WJ III Fluency	.25***	-.08	.20***	-.05	.05	—		
15. DIBELS ORF	.18**	-.10	.15*	.01	.01	.75***	—	
16. Reading grade	.39***	-.06	.31**	-.12	.03	.43***	.53***	—

Note. For correlations involving variable 16 (second semester reading grade), N ranges from 80-94; for all other correlations, N ranges from 245-298. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

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