Examining the Quality of Storybook Reading Sessions Between Parents and Children

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ABSTRACT

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The home environment is an important contributor to children's literacy experiences. One activity that is frequently investigated is parent-child storybook reading. However, despite the extant research, the quality of these book-reading interactions has often been overlooked. Therefore, the present study examined the quality of book-reading sessions between 60 parent-child dyads recruited from local schools in Montréal, Canada. Storybook reading sessions were recorded and behaviours were coded for types of talk (immediate, non-immediate, illustration production, and print referencing) and engagement (behaviours showing enjoyment in the reading session). The results of hierarchical multiple regressions demonstrated that parents' non-immediate talk and engagement accounted for unique variance in children's non-immediate talk and engagement, above and beyond children's own behaviours. Parallel regressions demonstrated that children's non-immediate talk and engagement accounted for unique variance in parents' non-immediate talk and engagement, above and beyond parents' own behaviours. These results emphasize the reciprocal role that both parents and children play during storybook reading activities. Implications for parents' practises are discussed.

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Chapter 1: Literature Review and Statement of the Problem

Sharing the love of books is one of the key elements of the home literacy environment (Burgess, Hecht, & Lonigan, 2002; Evans, Shaw, & Bell, 2000; Sénéchal, LeFevre, Thomas, & Daley, 1998; Whitehurst & Lonigan, 1998). Indeed, ample research has shown the effectiveness of storybook reading on children's emergent literacy, reading achievement, and language growth (e.g., Bus, van IJzendoorn, & Pellegrini, 1995; Scarborough & Dobrich, 1994; Whitehurst et al., 1988; Wood, 2002). When parents read storybooks with their children, they use a variety of techniques to promote and sustain interest. Some of these techniques include: listening to children's thoughts and ideas, discussing the story with them, and making connections to real-life experiences (Saracho, 2017). Given its importance, previous studies have examined reading frequency between parents and children. Yet, there is still limited research addressing how specific types of verbal and nonverbal interactions may impact children's talk and engagement during storybook reading activities. The goal of my Master's thesis is to provide a more complete examination of the associations between parent-child interactions and children's engagement during storybook reading.

Children's Early Literacy Experiences

It has been well documented that storybook reading plays a critical role in children's language and literacy acquisition (Saracho, 2017; Sénéchal & Young, 2008). Previous literature has demonstrated the positive correlations between shared book-reading on children's oral language skills and reading achievement (DeBaryshe, 1993; Scarborough, Dobrich, & Hager, 1991; Sénéchal et al., 1998). For instance, Sénéchal et al. (1998) showed that early elementary children's print exposure was significantly correlated to their oral language skills (e.g., receptive vocabulary, listening comprehension, and phoneme awareness). Moreover, Scarborough and

colleagues (1991) demonstrated the influence of children's book exposure on school achievement. Their results suggested that children who had less exposure to books prior to school entry became poorer readers in second grade, compared to their peers who had more frequent book exposure prior to school entry (Scarborough et al., 1991).

Additional studies examining particular components of the home literacy environment have shown similar results (e.g., Griffin & Morrison, 1997; Payne, Whitehurst, & Angell, 1994). Payne and colleagues (1994) obtained parental reports of literacy practices to determine the quality of the home literacy environment (e.g., frequency of shared book-reading, age onset of book-reading with child, duration of parent-child book-reading, number of books at home, frequency of child requests to read, and frequency of library trips). After controlling for parent IQ and education, the home literacy environment accounted for 12% of unique variance in children's receptive and expressive language (Payne et al., 1994). Using a similar method, Griffin and Morrison (1997) found that the home literacy environment contributed unique variance in children's receptive vocabulary, as well as in general knowledge and reading recognition.

Despite the positive correlations between storybook reading and children's literacy development however, the quality of the interactions were not considered in the aforementioned studies. There are reasons to believe that additional factors may also play into children's storybook reading experiences. For instance, in their meta-analysis, Bus and colleagues (1995) found that reading frequency only accounted for 8% of the variance in the literacy and language skills of preschoolers. Similarly, in Scarborough and Dobrich's review (1994), children's reading achievement was only moderately correlated with the amount of parent-preschooler storybook

reading. These findings suggest that the frequency of book-reading alone does not provide a comprehensive explanation for children's literacy and language outcomes.

In light of this, researchers have proposed that there is a link between quality and quantity of storybook reading, where poor reading quality dampens reading frequency (Bus, Belsky, van IJzendoorn, & Crnic, 1997). The results of the studies mentioned above are consistent with the notion that storybook exposure alone does not predict emergent literacy skills, and that perhaps the active guidance of parents is also necessary in order for children to acquire literacy skills (Sénéchal & LeFevre, 2002). The argument can be made then, that it is the development and maintenance of enjoyable book-reading interactions that help foster children's positive outlooks about reading (Baker, Mackler, Sonnenschein, & Serpell, 2001).

Book-reading interactions can be said to characterize the quality of the reading sessions (Roberts, Jurgens, & Burchinal, 2005). Han and Pritchett (2015) explain that the manner in which parents read to their children impacts children's engagement during reading sessions. In the literature, examples of such interactions have been previously measured through parental mediation, parental utterances, and affect (e.g., Aram & Levin, 2002; Sonnenschein & Munsterman, 2002). In the current study, parental interactions will be defined as the verbal and nonverbal responses displayed to children during the storybook reading session. To support this decision, Han and Pritchett (2015) emphasize that both behaviours and verbal comments made by parents and children should be acknowledged in order to better understand parent-child interactions during storybook reading. Perhaps the types of verbal and nonverbal interactions exhibited by parents will change the storybook reading quality, in turn impacting children's behaviours and development of literacy skills.

Sociocultural Perspective

The idea of quality during storybook reading is supported from a sociocultural perspective (Wass & Golding, 2014). Vygotsky's theory explains how learning occurs even before children reach school age, through questions and answering, and instruction and imitation (1978). Vygotsky's theory highlights the influence of language and social interaction in children's learning and cognitive development (Vygotsky, 1978). He suggests that learning is optimal when children's experiences are within their zone of proximal development, the space between one's independent ability and one's guided ability (Vygotsky, 1978). Through scaffolding via adult support, learners begin to delve into higher-level thinking, and are eventually able to perform tasks independently (Vygotsky, 1978). With regards to storybook reading, the variability in parents' scaffolding and interactive techniques may influence children's own engagement and interest in future reading-related activities.

Parent-Child Interactions During Storybook Reading

Given the limited research addressing parent-child interactions, researchers have recently shifted their focus to book-reading quality. Quality includes both the instruction (e.g., amount of talk, type of talk) and emotion (e.g., enjoyment, support) displayed by parents (Bingham, 2007; Cline & Edwards, 2013). Research addressing reading quality and literacy outcomes has demonstrated that the types of dyadic interactions between parents and children are associated with children's cognitive abilities, language development, and code-related skills (e.g., alphabet knowledge, phonological awareness, and concepts about print) (Cline & Edwards, 2016; Crain-Thoreson & Dale, 1999; Ezell & Justice, 2000; Han & Pritchett, 2015). Given that different types of parent-child interactions are associated with children's vocabulary development and decoding

ability, it is critical to investigate specific types of interactions, in order to better understand how children develop these skills.

One type of interaction that has previously been studied in the literature during storybook reading is meaning-related talk (Baker et al., 2001; Blewitt & Langan, 2016; Hargrave & Sénéchal, 2000; Hindman, Connor, Jewkes, & Morrison, 2008; Wasik & Bond, 2001; Whitehurst et al., 1994). Meaning-related talk involves interactions such as labelling illustrations, talking about and defining words, summarizing the text, and making connections and predictions based on previous knowledge (Hindman et al., 2008). Meaning-related talk can be further separated into immediate (contextualized) and non-immediate talk (decontextualized), where the difference between the two is the variation in complexity (Hindman et al., 2008). For instance, immediate talk consists of answering literal comprehension questions and labeling illustrations, and non-immediate talk consists of discussions that go beyond the text, such as making predictions (Hindman et al., 2008; Lane & Wright, 2007). Together, immediate and non-immediate talk aim to help children understand and make sense of what they are reading, and both have been associated with children's oral language skills (Han & Neuharth-Pritchett, 2015; Hindman, Skibbe, & Foster, 2013; Lane & Wright, 2007).

Previous research has assessed the links between meaning-related talk and children's vocabulary. For example, in a study conducted by Reese and Cox (1999), the researchers found that adult reading style predicted 4-year-old children's vocabulary. When readers asked questions to children throughout the story and focused children's attention on labels and illustrations, children scored higher on a test of receptive vocabulary.

In another study assessing the effects of interaction quality, 3-year-old children were tested on their ability to learn vocabulary words through storybook reading with parents and

teachers (Whitehurst et al., 1994). Children were randomly assigned to three conditions: being read to at school and at home, being read to only at school, and a control, not being read to at all. Parents and teachers were trained to reciprocate dialogue with children (e.g., asking questions, repeating the child, helping the child with responses, expanding on what the child says). Results post-intervention demonstrated that children whose parents and teachers engaged in more dialogue showed significant increases in their expressive vocabulary compared to the control condition whose parents and teachers did not engage in dialogue (Whitehurst et al., 1994).

The benefits of meaning-related talk have also been demonstrated in preschool classrooms (Wasik & Bond, 2001). Teachers were trained to extend activities of a storybook reading session using props, asking reflection questions, and prompting discussion. Results showed significant group differences; children in the intervention group acquired new vocabulary words, whereas children in the control group did not. These results illustrate the important role of interactions in children's ability to learn and consolidate new vocabulary words.

Finally, in a study focusing on non-immediate talk specifically, Walsh and Blewitt (2006) assigned 3-year-olds to a condition where the investigator either asked questions about the words in the storybook, or asked no questions about the words in the storybook. Post-test results showed increases in word comprehension for the group that was questioned about words compared to the control. In a later study, to examine if more extratextual talk (asking questions and expanding beyond the story content) was associated with children's word learning, the researchers found that while all children were able to consolidate target words, children who were exposed to more non-immediate talk learned significantly more words than children who were not (Blewitt, Rump, Shealy, & Cook, 2009).

The type of meaning-related talk that adults engage in during book-reading has also been linked with the type of meaning-related talk that children engage in (Danis, Bernard, & Leproux, 2001). Parents and children demonstrate a social coordination with each other, such that when children exhibit interest in parents' talk, it reinforces dialogue between the two parties (Danis et al., 2001). In creating such a context, both parents and children share and contribute to the storybook reading session, through a bidirectional relationship (Luo & Tamis-LeMonda, 2017).

Hammett and colleagues (2003) found that parents vary in the degree of abstraction in their questions. Specifically, depending on the type of question asked by parents (e.g., immediate or non-immediate), children tend to respond accordingly, with the appropriate level of difficulty demanded in the question. This is because an immediate meaning-related question that asks a child to label information directly in the story (e.g., "What's that?") is more readily accessible for a child than a non-immediate meaning-related question that requires more in depth-thought and cognitive processing (e.g., "What do you think will happen?") (Zucker, Justice, Piasta, & Kaderavek, 2010). Research examining parents' talk during book-reading has found that parents' abstract input is positively associated with preschool children's language skills (van Kleeck, Gillam, Hamilton, & McGrath, 1997). However, previous studies have only focused on parents' prompts and children's responses. My study will contribute to the literature, by addressing both parents' and children's prompts and responses during the book-reading session.

Another type of interaction during storybook reading is print-related talk, or print referencing (Justice & Ezell, 2004). Print-related talk involves both verbal and nonverbal communication by adults, directing children's attention to the text of the story (e.g., forms and features of writing) (Justice & Ezell, 2004). Nonverbal cues (e.g., pointing to and tracking print) and verbal cues (e.g., asking questions, comments, and requests about print) have been

commonly identified during adult-to-child book-reading (Justice & Ezell, 2004). These print referencing techniques have been associated with children's code-related skills (e.g., alphabet knowledge, phonological awareness, print concepts), which are required for decoding ability (Han & Neuharth-Pritchett, 2015). When adults point to and make remarks about print in text, children are provided the opportunity to familiarize themselves with the written language system (Ezell & Justice, 2000).

Numerous studies have assessed the associations between print-related talk and children's code-related skills (Ezell & Justice, 2000; Justice & Ezell, 2000, 2002; Piasta et al., 2010). For example, in an intervention study conducted by Ezell and Justice (2000), parents were invited to read with their 4-year-old children. An experimental group was shown a video that explicitly discussed print referencing, while a control group was not. Results demonstrated significant differences between groups, such that parents who had the opportunity to watch the print referencing video used those techniques when reading with their own children; they made significantly more verbal references to print (e.g., asked questions, made comments and requests) and nonverbal references to print (e.g., pointing and tracking text) (Ezell & Justice, 2000) compared to those who did not watch the video. In turn, children whose parents used the print referencing techniques made more utterances about print compared to the children whose parents did not use print referencing techniques (Ezell & Justice, 2000). In a later study, Justice and Ezell (2002) demonstrated that storybook reading sessions that focused on print were positively correlated with children's print awareness. Results from both studies reinforce how parent-initiated print interactions not only encourage children to engage in print-related talk, but also impact the development of children's code-related skills.

Taken together, it is evident that both meaning-related and print-related interactions are

important during storybook reading. Therefore, recent research has addressed both types of talk to investigate children's literacy development (e.g., Han & Neuharth-Pritchett, 2015; Hindman et al., 2008). Han and Neuharth-Pritchett (2015) assessed meaning-related and print-related talk during storybook reading in relation to preschool children's oral language skills and letter-name knowledge. Through structural equation modeling, their results suggested that the two types of interactions influenced unique aspects of children's literacy development; that is, meaning-related talk was positively correlated with receptive and expressive vocabulary, while print-related talk was positively correlated with letter-name knowledge (Han & Neuharth-Pritchett, 2015). These findings highlight the importance of examining both types of interactions during shared book-reading activities, given that they seem to influence different types of skill development.

An important factor that needs to be taken into consideration, is that during storybook reading, the types of talk expressed by adults are assumed to direct children's attention to specific content, which in turn impacts the language and literacy skills that children will acquire (Hindman et al., 2008). It is possible however, that children may not be as equally engaged with every meaning-related and print-related comment made by adults. The question remains then, how other types of parental interactions, beyond meaning-related and print-related talk also contribute to children's engagement during storybook reading activities.

Previous studies have examined parental interactions beyond the types of talk, by separating affect from instruction (e.g., Baker et al., 2001; Sonnenchein & Munsterman, 2002). Baker and colleagues (2001) observed first-grade children reading with their mothers. In addition to coding instructional verbalizations, the researchers also measured affective behaviours displayed by parents and children (e.g., reading expression, physical contact, involvement,

sensitivity). Their results demonstrated that the affective quality of storybook reading sessions predicted children's reading engagement in the third-grade, even after partialling out prior book-reading and reading skills (Baker et al., 2001). Similarly, Sonnenchein and Munsterman (2002) found that children's motivations for reading were predicted predominantly by the affective quality of the reading session, and not affected by immediate or non-immediate content utterances. The results from both studies suggest that the affective nature of parent-child reading sessions should also be analyzed in addition to the types of talk, as they seem to influence children's engagement and motivation to read.

In a more recent study conducted by Martin-Chang and Gould (2012), the researchers assessed 6-year-old children's engagement during storybook reading with their mothers. Types of talk, evaluative feedback, miscue feedback, and child engagement were coded during adult-to-child and child-to-adult book-reading. The findings demonstrated positive correlations between illustration talk, non-immediate talk, and print-related talk with child interest in reading. Results showed that print referencing did not hinder child interest; instead, increased text-talk was positively correlated with child engagement. The researchers noted however, that although text-related talk was associated with increases in child engagement during the storybook reading session, it should not replace the other book-related themes present (e.g., illustration production and non-immediate talk). Based on these findings, it can be argued that different types of interactions must occur in combination with one another in order to promote higher levels of child engagement during shared book-reading activities.

Summary

Taken together, these results are consistent with a meta-analysis done by the National Early Literacy Panel (2008) that highlights the importance of interactive reading experiences in children's oral language skills and print knowledge. The Panel's findings suggest that shared reading is equally effective for different groups of children (e.g., older, younger, at-risk) (Early Literacy Panel, 2008). Thus, when parents and children share reading experiences together, the literacy outcomes of children who engage with storybooks are better compared to those who have reading experiences of lower quality.

Factors Contributing to Differences in Book-Reading Quality

Parent-child attachment. There are reasons to believe that book-reading interactions differ between parents and children. Bowlby's Attachment Theory explains how infants develop a bond with their primary caregivers throughout the first year of life, where caregiver responsiveness and availability is the foundation of the relationship (Bowlby, 1988). He states that a central component of his parenting concept is the secure base that parents and children share, where children are at ease to explore their surrounding world, knowing that their caregivers are available and welcoming upon their return (Bowlby, 1988). He goes on to explain that consistent physical and emotional nourishment are the foundation of this secure base (Bowlby, 1988).

Regarding storybook reading, previous research has supported the idea that there is an association between the parent-child relationship and how parents and children share a book together (Bus & van IJzendoorn, 1992; Bus et al., 1997; Bus & van IJzendoorn, 1997). For instance, in one study, researchers assessed how attachment affects behaviours during shared book-reading sessions between parents and their children (Bus et al., 1997). Their results

demonstrated that mothers of insecurely attached children exhibited fewer instances of commenting, labeling, pointing, correcting, and motivating, and more patterns of direct reading; in turn, insecurely attached children also demonstrated more aggression and distraction during the book-reading session. These differences in attachment further impacted the interactive quality of the reading sessions, where insecure-avoidant dyads demonstrated lower quality behaviour compared to securely attached dyads.

Bus et al. (1997) emphasize that in order to have an effective, collaborative setting, a secure parent-child attachment is required, where the interaction exchanges between both the parent and child are important. Securely attached children may be more capable of finding an appropriate balance between exploration and attachment in comparison to insecurely attached children who tend to focus more on their caregivers (Bus et al., 1997). As a result, these attachment differences produce unique interactional contexts for parents and children, impacting children's developmental outcomes.

Maternal behaviours. Caregiver-child interactions are also heavily influenced by maternal behaviours (Skibbe, Moody, Justice, & McGinty, 2010). Maternal attachment, sensitivity, and responsiveness all play a critical role in children's linguistic and cognitive achievements (e.g., Paavola, Moilanen, & Lehtihalmes, 2005a; van IJendoorn, Dijkstra, & Bus, 1995).

These maternal behaviors have been previously studied in storybook reading. To assess how the maternal quality of instruction is related to children's participation during storybook reading, mothers were asked to read with their 4.5-year-old children (Skibbe et al., 2010). The results demonstrated an observable difference in children's participation based on mothers' behaviours; high participation was exerted only when mothers demonstrated more sensitivity

during the interaction. The researchers indicate that strictly showing books to children is not sufficient to encourage children's participation during book-reading activities, and that maternal engagement also plays a prominent role.

This also suggests that maternal behaviours during the book-reading activity may be a predictor of children's interest in books (Ortiz, Stowe, & Arnold, 2001). In their study, Ortiz and colleagues (2001) created an intervention for parents to help foster their children's interest in reading. The intervention involved encouraging parents to make inquiries about books, exert enthusiasm in book-reading activities, provide positive feedback while reading, and allow children to choose the books that would be read. Those in the control group were not explicitly taught how to increase active involvement, and only had a discussion with the researcher about the importance of reading. According to their results, one week later, children whose parents were in the intervention group showed significantly more interest in the storybook reading session with their parents in comparison to children whose parents were in the control group. This malleability of parental behaviors may indicate parents' ability to learn different ways of reading with their children (Ortiz et al., 2001), reinforcing the importance of the quality of parent-child interactions.

Parental beliefs about reading. Children's storybook reading is also predicted by parental beliefs about reading (Baker & Scher, 2002). The literacy environments that parents create for their children substantially impact children's reading and learning outcomes (Yeo, Ong, & Ng, 2014). This was demonstrated in a study conducted by Bingham (2007). After videotaping mother-child book-reading interactions with 3-and 4- year-old children, his results illustrated a significant positive relationship between maternal literacy beliefs (e.g., perceptions about how children should be read to, how literacy skills are developed at home) and the quality

of the home literacy environment (e.g., frequency of reading, number of books in the home, library visits), as well as between maternal literacy beliefs and the quality of joint-reading interactions. Furthermore, mothers' home-literacy practices were positively correlated with children's print knowledge, letter knowledge, receptive language, and emergent reading. These results suggest that maternal literacy beliefs are associated with the quality of book-reading activities, and the quality of these interactions subsequently affect children's literacy development. Other research has also found evidence to support the idea that maternal beliefs about literacy are related to joint-reading practice and quality (e.g., DeBaryse, 1995), proposing that parental beliefs largely influence the literacy-related practices in the home (Yeo et al., 2014).

Socioeconomic status. These book-reading differences between children are not strictly limited to relationship and parental factors. Socioeconomic status is also a significant predictor of the type of parenting practices that take place in the home (Roubinov & Boyce, 2017). For example, families from low socioeconomic status neighborhoods often lack the financial resources to expend on children's activities and materials (Roubinov & Boyce, 2017). Thus, limited accessibility to literacy materials consequently impacts the quality of the shared storybook reading in the home (Neuman, 1996). When children of economic disadvantage have little access to books, they are not provided the cognitive and linguistic stimulation that comes from discussions through shared reading experiences (Neuman, 1996). On the contrary, children who have access to books and participate regularly with their parents in reading activities have a higher likelihood of entering school with better vocabulary skills than their counterparts (Mol & Bus, 2011).

Current Study

Given the findings from the storybook reading literature, there is reason to believe that both verbal and nonverbal interactions would affect children's vocabulary and literacy skills, as well as the types of talk they use and their engagement. However, previous studies have either narrowed their focus to one type of interaction (e.g., types of talk) (Blewitt & Langan, 2016; Justice & Ezell, 2004; Wasik & Bond, 2001), focused only on parents' talk during the reading session (e.g, van Kleeck et al., 1997), or used coding schemes that may not have been sensitive enough to detect variability between dyads (e.g., rating scales) (Baker et al., 2001; Sonnenchein & Munsterman, 2002).

Therefore, the present study aims to replicate and extend the literature on storybook reading, literacy and language outcomes, and engagement by including different types of verbal and nonverbal parent-child behaviours. There are four goals in the current study. First, I will examine the links between parents' meaning-related talk, illustration talk, and children's receptive language. Second, I will examine the links between parents' print-related talk and children's reading ability. Third, I will investigate whether parents' talk is associated with children's talk during the storybook reading session. And finally, I will examine whether parents' engagement is associated with children's engagement in the reading session. It is hypothesized that (a) children will have better receptive vocabulary when parents exhibit more meaning-related talk and illustration talk, (b) children will have higher reading ability when parents exhibit more print-related talk, (c) children will engage in more of each of the subtypes of talk (immediate, non-immediate, illustration) when parents engage in more of each of the subtypes of talk, and (d) children will show more engagement in the reading session when parents are more engaged in the reading session.

Chapter 2: Method

Participants

The sample in the current study was part of a larger study that examined reading and writing activities between parents and children. The sample consisted of 60 parent-child dyads from local schools in Montréal, Québec, Canada. Paper and electronic flyers were distributed to recruit parent-child dyads from school boards and on social media platforms. Although children's language of instruction in school was not obtained, parents and children were required to have an understanding of the English language in order to participate. At the time of testing, the children had just completed Kindergarten or Grade 1. As compensation, each dyad received a children's book of their choice, from a selection provided by the researchers.

The parent sample constituted 56 mothers and 4 fathers (M_{age} = 39.32 years, *SD* = 4.14). On average, parents had 2.60 children (*SD* = 0.81, range = 1–5). In terms of marital status, 83.3% of parents were married, 1.7% were single, 1.7% were in a committed relationship, 8.3% were common-law, 1.7% were separated, and 3.3% were divorced. The mean annual income was approximately $110, 000 CAD. Among the sample, 3.3% had a high school diploma, 10.0% had a college degree, 38.3% had undergraduate degrees, 3.3% had a graduate diploma, 36.7% had a Master's and graduate professional degree, 5.0% had a Doctorate, Doctor of Dental Surgery Degree, or Medical Degree, and 3.3% had a Post-Doctorate. Additionally, 78.3% of the sample did not have a degree in Education, and 21.7% had a degree in Education or Speech Language Pathology. At home, 51.7% of participants spoke in English, 35.0% of participants spoke in English and French, 3.3% spoke in French, 6.7% spoke in English and another language, 1.7% spoke in English, French, and another language, and 1.7% spoke in another language only.

The child sample consisted of 25 girls and 35 boys (M_{age} = 6 years, 8 months, *SD* =

0.64). From those, 38 children had just completed Kindergarten and 22 children had just completed Grade 1 prior to testing.

Materials

Parent materials. Parents completed a demographics questionnaire requesting information regarding gender, marital status, years of schooling, annual income, and languages spoken at home (see Appendix A).

Parents were also given a children's Title Recognition Test (TRT; Sénéchal, Lefevre, Hudson, & Lawson, 1996). Sénéchal and colleagues (1996) state that parental knowledge of storybooks is an indicator of book exposure during shared reading activities. In turn, the TRT can be an indirect method of measuring children's reading frequency, library visits, and storybook exposure at home (Ladd, Martin-Chang, & Levesque, 2011; Sénéchal et al., 1996). The TRT for the current study was taken from previous studies (e.g., Cunningham, Perry, Stanovich, & Stanovich, 2004; Ladd et al., 2011). Storybooks in the TRT were chosen through databases, such as bestseller lists, which were able to provide up-to-date information about appropriate books for children who were in Kindergarten to Grade 3 (Cunningham et al., 2004). The checklist included 35 real titles and 14 foils (see Appendix B).

Child materials. Children's literacy skills were assessed using a subset of the Wide Range Achievement Test: Fourth Edition (WRAT-4; Wilkinson & Robertson, 2006). The WRAT-4 is an academic assessment battery that measures individuals' reading, spelling, and math achievement. It is administered to individuals between the ages of 5-94 years old. For children between the ages of 5-7 years old, administration usually takes 15-25 minutes.

The word-reading component of the WRAT-4 assesses an individual's letter and word decoding. In the word reading component of the WRAT-4, 15 letters and 55 words are to be read

by individuals, beginning with letter identification and following with word decoding. Testing is discontinued after ten consecutive errors. The reading component of this measure has previously shown high internal consistency (α = .96) and moderate test-retest reliability (α = .86) (Wilkinson & Robertson, 2006). The developers of the WRAT-4 state that earlier versions of the Wide Range Achievement Test and its correlations with other measures that evaluate academic achievement and cognitive ability provide support for validity.

Children's receptive vocabulary was measured using Form B of the Peabody Picture Vocabulary Test, 4th Edition (PPVT-4; Dunn & Dunn, 2007). The PPVT-4 is a norm-referenced tool that is used for individuals from 2 years, 6 months into adulthood. It is separated into two parallel forms, A and B (for purposes of retesting). Both forms consist of 228 items across 19 sets. Each set has 12 items, and increases in level of difficulty. The PPVT-4 is made up of four full colour illustrations per page, and individuals are asked to point to the illustration that corresponds to a specific target word. Once the individual incorrectly identifies eight or more words in a set, the test is terminated. The PPVT-4 usually takes 10-15 minutes to administer, and scoring is done concurrently with testing. This measure has demonstrated high split-half reliability (α = .94) and high test-retest reliability (α = .92-.96). It has shown evidence of both construct and content validity (Dunn & Dunn, 2007).

Storybooks. Five storybooks written by popular children's author, Oliver Jeffers, were chosen for the reading session (*Lost and Found, Stuck, The Incredible Book Eating Boy, This Moose Belongs to Me,* and *Up and Down*). The storybooks were selected based on comparable writing styles, similar visuals, and varying Flesch-Kincaid grade levels (see Appendix C).

Storybook reading recording devices. Storybook reading sessions were recorded using a Sony HDR-XR350 video camera and a 13-inch MacBook Air laptop. Both devices were used to capture verbal and nonverbal interactions between parents and their children.

Procedure

The principal researcher's contact information was provided on flyers for interested parents (see Appendix D). Interested participants were asked to provide their names, and phone numbers or email addresses to set a date and time to participate in the study. Sessions took place at the participants' convenience either in their homes or at Concordia University, with reimbursement for travel and parking costs.

All data collection occurred in one session. Data collection took place in the summer, up until the beginning of the next academic year. Two researchers were present for each visit. During each session, after having obtained written consent (see Appendix E), one researcher administered the demographics questionnaire and TRT to parents. For the TRT, parents were asked to identify real storybook titles from a list of 35 real titles and 14 foils. Proportion scores were computed using the following equation: (real titles identified/total number of real titles) - (foils identified/total number of foils). If more than one parent was present in the household, they decided between themselves who was going to participate in the study.

As the parent completed the TRT with one researcher, the other researcher simultaneously obtained verbal assent from the child (see Appendix F) and administered the reading subtest of the WRAT-4, followed by the PPVT-4. Both measures were administered according to standardized protocol.

Once the individual measures were completed, parents and children were asked to sit in proximity at a large table for the storybook reading session. Participants were informed that the

storybook reading session would be recorded on two devices. The video camera was set up on a tripod, in order to gain access to an 'over-the-shoulder' shot of the storybook. It was directed to the text of the storybook, in order to record nonverbal gestures, such as pointing to the text and turning the pages of the book. The laptop was placed on the table at a short distance away from parents and children ('en face'), in order to record verbal exchanges and facial expressions, such as smiling and laughing.

Parents and children were asked to choose a storybook that had not been read before from the selection provided. The only instruction given was to read the storybook together as they normally would. No specification was given as to who should primarily read the storybook, in order to allow choice and analyze potential differences between groups, based on who was the primary reader (e.g., Baker et al., 2001). Both researchers made sure not to be in direct view of parents and children while they read, in order to minimize participant bias, and create a natural context for the reading session.

Coding of Behaviours

Recordings on the laptop and the camcorder were used to code verbal and nonverbal behaviours. Data was transcribed verbatim into InqScribe transcription software (version 2.2.4). Each recording was reviewed five times. The initial verbal transcriptions for parent and child were done using the camcorder. Then, after reviewing the recording from the camcorder, parents' nonverbal print-related and illustration productions (e.g., tracking print, pointing to illustrations) were added. Next, after reviewing the recording from the camcorder, children's nonverbal print-related and illustration productions (e.g., tracking print, pointing to illustrations) were added. Then, after reviewing the recording from the laptop, all parents' nonverbal exchanges (e.g., eye contact, smiling, laughing, touch) were added. Finally, after reviewing the

recording from the laptop, all children's nonverbal exchanges (e.g., eye contact, smiling, laughing, touch) were added. With the help of a research assistant, all verbal and nonverbal behaviours were summed and the data were inputted into SPSS version 21.0 for analyses.

Verbal and nonverbal book-related talk. An adapted coding scheme from Sonnenschein and Munsterman (2002) and Martin-Chang and Gould (2012) was used to classify every parent and child verbal and nonverbal behaviour regarding book-related themes and engagement. See Appendix G and Appendix H for the coding schemes of parent and child behaviours.

Book-related themes were categorized into: meaning-related (immediate and non-immediate), print-related, or illustration production. Immediate meaning-related talk was coded for any interaction related to story (e.g., events occurring in the story). A composite was created for non-immediate meaning-related talk, consisting of any interaction beyond the story content: making predictions, defining words, interpreting story events, referring to personal experiences, referring to other text, and referring to world knowledge. Print-related talk was coded for any verbal or nonverbal interaction related to the text in the story (e.g., referring to print and words in pictures, pointing to text in the story). Illustration production was coded for every comment made in relation to illustrations and for every instance of pointing to the pictures in the story. While immediate and non-immediate talk were strictly verbal, a composite was created for print-related talk and illustration productions, which included verbal and nonverbal behaviours.

Engagement. An adapted coding scheme from the Affective Aspects of Shared Reading Scale (Sonnenschein & Munsterman, 2002) and Martin-Chang and Gould (2012) was used to create composite scores of parent and child engagement. Unlike in the Affective Aspects of Shared Reading Scale however, all observable instances of facial expressions (e.g., smiling,

laughing), touch and gestures (e.g., hugging, parent putting arm around child), eye contact (direct eye contact, parent looking towards child), and proximity (e.g., parent moving closer to child) were coded. Engagement was operationally defined for both parents and children as circumstances where "overt behaviour signal[ed] enjoyment…" (Martin-Chang & Gould, 2012, p. 861). In the current study, parent and child engagement were created through a composite of: facial expressions, eye contact, touch and gestures, proximity, and expression of verbal and nonverbal interest in the story.

Inter-rater reliability. I coded the verbal and nonverbal behaviours, and the principal researcher served as the second rater. We independently coded 15 out of 60 transcripts (25%). Percentage agreement was 94.3%. Any disagreements were resolved through discussion.

Design

The current study was correlational in nature. It was hypothesized that (a) children would have better receptive language skills when parents exhibited more meaning-related and illustration talk, (b) children would have higher reading ability when parents exhibited more print-related talk, (c) children would engage in more meaning-related talk when parents engaged in more meaning-related talk and (d) children would show more engagement in the reading session when parents were more engaged in the reading session. In the first hypothesis, the predictor variables were parents' meaning-related talk and parents' illustration talk and the outcome variable was children's receptive language. In the second hypothesis, the predictor variable was parents' print-related talk and the outcome variable was children's reading ability. In the third hypothesis, the predictor variable was parents' type of talk and the outcome variable was children's type of talk. And in the fourth hypothesis, the predictor variable was parent engagement and the outcome variable was child engagement.

Chapter 3: Results

On average, the storybook reading sessions were 7 minutes and 7 seconds long (*SD* = 3 minutes and 11 seconds). In all dyads, children chose the storybooks that were read (see Appendix I).

According to *t*-tests, English-speaking and bilingual parents did not significantly differ in their behaviours (type of talk, engagement), and groups did not significantly differ based on whether parents were the primary readers or whether both parents and children were readers. Therefore, all participants were combined in order to increase power in the analyses.

The means and standard deviations for all behaviours are listed in Table 1. As shown in Table 1, parents exhibited more counts of all verbal and nonverbal behaviours compared to their children. *T*-tests confirmed that the differences between parent and child behaviours were statistically significant for each of the five behaviours (see Table 1).

Table 1

Descriptive Statistics and T-Test Results for Parent and Child Behaviours

	Parent		Child		95% CI for Mean		
Behaviour	*M*	*SD*	*M*	*SD*	Difference	*t*	df
Immediate Talk	1.72	2.64	0.70	1.06	0.45, 1.58	3.58*	59
Non-Immediate Talk	8.98	8.96	3.23	3.81	3.99, 7.51	6.54**	59
Illustration Talk	24.60	22.79	7.13	9.33	11.95, 22.98	6.34**	59
Print-Related Talk	54.90	83.03	7.15	19.82	26.52, 68.98	4.50**	59
Engagement	57.28	41.02	31.47	24.75	17.58, 34.05	6.27**	59

*$p < .05$, **$p < .001$.

The first goal of my study was to examine whether parents' meaning-related talk and illustration talk were associated with children's receptive language. In order to examine these

associations, bivariate correlations were run between parents' immediate talk, parents' non-immediate talk, parents' illustration talk, and children's PPVT scores. The predictor and outcome variables were not significantly correlated with each other, and were therefore removed from further analyses.

The second goal of my study was to examine whether parents' print-related talk was associated with children's reading ability. In order to examine these links, bivariate correlations were run between parents' print-related talk and children's WRAT reading scores. The predictor and outcome variables were not significantly correlated with each other, and were therefore removed from further analyses.

The third goal of my study was to determine whether parents' meaning-related talk was associated with children's meaning-related talk. Therefore, in order to assess the associations, correlations were run between parent and child types of talk (immediate, non-immediate, illustration). As shown in Table 2, all three types of parent talk were significantly associated with each other. Furthermore, parents' immediate talk was significantly correlated with children's immediate and non-immediate talk. Parents' non-immediate talk was correlated with children's non-immediate talk and illustration talk. And parents' illustration talk was correlated with children's illustration talk (see Table 2). In sum, the parent talk sub-types were positively correlated with the child talk sub-types. However, of particular interest, was that all three parent talks (immediate, non-immediate, and illustration), were associated with children's non-immediate talk only. Further, only parents' non-immediate talk was significantly correlated with parents' TRT scores, $r(58) = .28$, $p < .05$, suggesting that higher print exposure is associated with more non-immediate talk by parents during storybook reading. Interestingly, children's non-immediate talk was also positively associated with parents' TRT scores, $r(58) = .25$, $p = .06$. It

should be noted that parents exhibited significantly more non-immediate talk than immediate talk, $t(59) = 7.51$, $p < .001$, and children exhibited significantly more non-immediate talk than immediate talk, $t(59) = 5.05$, $p < .001$.

The last goal of my study was to address whether parents' engagement was associated with children's engagement. Also shown in Table 2, parent and child engagement were significantly correlated with each other, suggesting that as parents were more expressive about the story, and exerted more warmth towards their child, their child followed suit. Particularly noteworthy, was that child engagement was only significantly correlated with parents' non-immediate talk, while parents' immediate talk was not correlated with child engagement.

Table 2

Bivariate Correlations Between Variables of Interest

	1	2	3	4	5	6	7	8	9
1. Parent TRT Score	-								
2. Parent Immediate Talk	.12	-							
3. Parent Non-Immediate Talk	.28*	.56**	-						
4. Parent Illustration Talk	.23	.37**	.54**	-					
5. Parent Engagement	.20	.22	.65**	.35**	-				
6. Child Immediate Talk	-.07	.58**	.19	.08	.08	-			
7. Child Non-Immediate Talk	.25†	.29*	.71**	.28*	.59**	.06	-		
8. Child Illustration Talk	.10	.21	.47**	.35**	.47**	.07	.53**	-	
9. Child Engagement	.08	.15	.44**	.17	.63**	.06	.51**	.45**	-

*$p < .05$, **$p < .01$, 2-tailed.

Given the significant correlations between parent and child non-immediate talk and engagement, a series of hierarchical multiple regression analyses were conducted to examine the links between dyads. In the first set of regressions, non-immediate talk was examined as the outcome. In the second set of regressions, engagement was examined as the outcome.

In the first set of regressions, I was interested in examining parent-child non-immediate talk. In the first regression, the outcome variable was child non-immediate talk. In the first block and second block, parents' TRT scores and children's immediate talk did not account for significant unique variance in child non-immediate talk. However, the addition of child illustration talk in the third block accounted for 25.1% of unique variance in children's non-immediate talk. In the fourth block, the addition of child engagement accounted for 9.0% of unique variance in children's non-immediate talk, and in the fifth block, the addition of parent engagement accounted for 5.7% of unique variance in children's non-immediate talk. Even after accounting for 46.7% of variance in children's non-immediate talk, parents' non-immediate talk still explained 12.2% of unique variance above and beyond the other predictor variables. The full model of child immediate related talk, child illustration talk, child engagement, parent engagement, and parent non-immediate talk was statistically significant, $R^2 = .59$, $F(6, 53) = 12.61$, $p < .001$, adjusted $R^2 = .54$. The β coefficients and standardized betas are presented in Table 3.

Table 3

Hierarchical Multiple Regression Predicting Child Non- Immediate Talk

	Child Non-Immediate Talk											
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Variable	*B*	*ß*	*B*	*ß*	*B*	*ß*	*B*	*ß*	*B*	*ß*	*B*	*ß*
Constant	1.71		1.47		.43		-.67		-1.06		-.61	
Parent TRT	5.17	.25	5.29	.25	4.15	.20	3.94	.19	2.96	.14	1.19	.06
Child Immediate Talk			.29	.08	.15	.04	.12	.03	.07	.02	-.19	-.05
Child Illustration Talk					.21	.51	.15	.36	.12	.29	.08	.18
Child Engagement							.05	.34	.03	.17	.03	.16
Parent Engagement									.03	.33	.01	.08
Parent Non Immediate Talk											.21	.50
R^2	.06		.07		.32		.41		.47		.59	
ΔR^2	.06		.01		.25		.09		.06		.12	
ΔF	3.78		.41		20.69**		8.40*		5.75**		15.68**	

*$p < .05$, **$p < .001$.

It was critical however, to acknowledge that children and parents might both contribute to the reading session. Therefore, a parallel regression was conducted; this time making children's non-immediate talk the predictor and parents' non-immediate talk the outcome. In the first block, parents' TRT scores accounted for 8.1% of significant variance in parents' non-immediate talk. In the second block, parents' immediate talk accounted for 27.5% of unique variance in parents' non-immediate talk. In the third and fourth blocks, parents' illustration talk accounted for 10.5% of unique variance, and parents' engagement accounted for 19.4% of unique variance in parents' non-immediate talk. Importantly, although children's engagement did not explain unique variance in parents' non-immediate talk in the fifth block, children's non-immediate talk did significantly account for 9.0% of unique variance in parents' non-immediate talk, above and beyond the other predictor variables. The full model was statistically significant, $R^2 = .75$, $F(6, 53) = 26.08$, $p < .001$, adjusted $R^2 = .72$. The β coefficients and standardized betas are presented in Table 4.

Table 4

Hierarchical Multiple Regression Predicting Parent Non- Immediate Talk

	Parent Non-Immediate Talk											
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Variable	*B*	*ß*	*B*	*ß*	*B*	*ß*	*B*	*ß*	*B*	*ß*	*B*	*ß*
Constant	4.87		2.72		.98		-2.55		-2.85		-1.73	
Parent TRT	13.98	.28	10.78	.22	7.47	.15	4.58	.09	4.74	.10	2.21	.05
Parent Immediate Talk			1.80	.53	1.38	.41	1.22	.36	1.21	.36	1.01	.30
Parent Illustration Talk					.14	.36	.09	.22	.09	.22	.08	.21
Parent Engagement							.10	.48	.09	.43	.06	.28
Child Engagement									.03	.97	-.01	-.03
Child Non Immediate Talk											.93	.40
R^2	.08		.36		.46		.65		.66		.75	
ΔR^2	.08		.29		.11		.19		.00		.09	
ΔF	5.08*		24.37**		10.87*		30.82**		.45		18.81**	

*$p < .05$, **$p < .001$.

In the second set of regressions, the outcome variable was child engagement. Children's non-immediate talk was entered into the first block, accounting for 26.3% of unique variance in children's engagement. Children's illustration talk and parents' non-immediate talk were entered into the second and third blocks respectively, although they did not account for unique variance in the analysis. Last, parents' engagement was entered and results demonstrated that even after accounting for 31.2% of the variance in the model, parents' engagement still explained 13.4% of unique variance in children's engagement over and above children's non-immediate talk, children's illustration talk, and parents' non-immediate talk. The full model was statistically significant, $R^2 = .45$, $F(4, 55) = 11.08$, $p < .001$, adjusted $R^2 = .41$. The β coefficients and standardized betas are presented in Table 5.

Table 5

Hierarchical Multiple Regression Predicting Child Engagement

	Child Engagement							
	Model 1		Model 2		Model 3		Model 4	
Variable	*B*	*ß*	*B*	*ß*	*B*	*ß*	*B*	*ß*
Constant	20.69		18.76		17.82		9.42	
Child Non-Immediate Talk	3.33	.51	2.48	.38	2.04	.31	1.36	.21
Child Illustration Talk			.66	.25	.62	.23	.41	.16
Parent Non-Immediate Talk					.29	.11	-.30	-.11
Parent Engagement							.31	.51
R^2	.26		.31		.31		.45	
ΔR^2	.26		.04		.01		.13	
ΔF	20.66**		3.64		.45		13.32*	

*$p < .05$, **$p < .001$.

As before, in recognition of the fact that both parents and children might contribute to the reading session as a dyad, a parallel regression was run with the same variables, but this time making child engagement the predictor and parent engagement the outcome. In the first block, parents' non-immediate talk accounted for 42.1% of unique variance in parents' engagement. Parents' illustration talk was entered into the second block, and children's non-immediate talk was entered in the third block, though they did not account for unique variance in this analysis. In the last block, results demonstrated that even after accounting for 45.8% of the variance in parents' engagement, children's engagement still accounted for 11.7% of unique variance in parents' engagement, above and beyond parents' non-immediate talk, parents' illustration talk, and children's non-immediate talk. The full model was statistically significant, $R^2 = .58$, $F(4, 55) = 18.62$, $p < .001$, adjusted $R^2 = .54$. The β coefficients and standardized betas are presented in Table 6.

Table 6

Hierarchical Multiple Regression Predicting Parent Engagement

	Parent Engagement							
	Model 1		Model 2		Model 3		Model 4	
Variable	*B*	*ß*	*B*	*ß*	*B*	*ß*	*B*	*ß*
Constant	30.59		30.69		28.28		15.16	
Parent Non-Immediate Talk	2.97	.65	2.98	.65	1.99	.44	1.67	.36
Parent Illustration Talk			-.01	-.00	.06	.03	.09	.05
Child Non-Immediate Talk					2.97	.28	1.24	.12
Child Engagement							.67	.40
R^2	.42		.42		.46		.58	
ΔR^2	.42		.00		.04		.12	
ΔF	42.24**		.00		3.78		15.19**	

*$p < .05$, **$p < .001$.

Chapter 4: Discussion

The overarching goal of my study was to investigate whether the quality of parent-child interactions was associated with children's behaviours during storybook reading. Towards this end, I examined whether parents' talk and children's talk were related while they were reading together. I subsequently examined whether parents' engagement and children's engagement were related during this same book-reading activity.

Consistent with my hypothesis that parents' meaning-related talk would be positively associated with children's meaning-related talk, my data showed that when parents engaged in more meaning-related talk, their children did, too. Interestingly, non-immediate talk was observed far more frequently than immediate talk in both parents and children. There is a growing consensus that non-immediate talk offers critical opportunities for expanding children's language development (e.g., Blewitt et al., 2009; Wasik & Bond, 2001; Whitehurst et al., 1994); this teaching style encourages children's active participation and higher-order thinking, thus providing optimal conditions for children's learning outcomes (Cline & Edwards, 2016). As such, it is heartening that both parents and children seemed naturally inclined to rely on conversations employing non-immediate talk.

Parents play a critical role in the book-reading style that is adopted during reading sessions. One of the areas that falls under parental influence is the frequency of storybook reading. According to my data, there was a positive link between the Title Recognition Test, which acts as a proxy of storybook reading in the home, and the amount of non-immediate talk observed in parents. This suggests that parents who read more to their children, are also more likely to engage in talk that goes beyond the direct text found in the storybook. For example, in a study conducted by Hindman and colleagues (2008), the researchers found a positive association

between parents' and children's non-immediate talk, such that when parents engaged in more non-immediate talk, their children did as well. This finding is especially relevant, given that the type of talk parents use with their children impacts how children contribute to the reading session (Luo & Tamis-LeMonda, 2017). For instance, Luo and Tamis-LeMonda (2017) examined the interactions between mothers and 4-year-old children reading together. The authors coded prompts and responses as basic (e.g., immediate) and advanced (e.g., non-immediate). They found that depending on the level of sophistication of prompts asked by mothers, children matched their responses appropriately; basic prompts elicited simple answers, whereas more challenging prompts resulted in responses from children that went beyond the text (Luo & Tamis-LeMonda, 2017). Similar results have been found in classroom settings; Zucker et al. (2010) found that the level of complexity in teachers' prompts was consistent with preschoolers' level of complexity in responses. They suggest that when adults stimulate talk beyond the story, it consequently drives children to respond with a comparable level of difficulty (Zucker et al., 2010). Thus, it can be argued that an appropriate level of scaffolding is required by more skilled adults (Vygotsky, 1978), in order for children to engage in talk that is higher in level of difficulty. The results reported here are in line with this body of work; when the parents in this sample used more non-immediate talk, their children were also more likely to increase the complexity of their conversations.

However, after examining dyadic exchanges in my study, I noted that both the parents and the children contributed to each other's non-immediate talk. According to my results, there appears to be symmetry between parents and children. Not only did parents' non-immediate talk account for unique variance in children's non-immediate talk, but the inverse pattern was also found. Namely, children's non-immediate talk accounted for unique variance in parents' non-

immediate talk as well. Thus, it seems that both parents and children play a critical role in each other's discussion beyond the story content.

My findings can be viewed through Sameroff's (2009) transactional model, which emphasizes the bidirectional exchanges in social interactions (Luo & Tamis-LeMonda, 2017). In this instance, the bidirectional exchanges can be observed between parents and children, where parents' non-immediate talk played a particular role in children's non-immediate talk beyond children's own talk and engagement, and children's non-immediate talk played a particular role in parents' non-immediate talk, beyond parents' own talk and engagement. It can be argued that to achieve this bidirectional relationship, proper scaffolding is required. As evidence by the number of meaningful utterances made my parents, it seems that parents took on a leadership role in the discussions that occurred around the book-reading sessions. However, at the same time, children demonstrated reciprocity by actively contributing to those exchanges, too. Thus, it can be argued that adults scaffold to help children achieve more advanced talk, and gradually decrease this scaffolding as children's learning increases (Saracho & Spodek, 2010). Ideal scaffolding takes children's abilities into account; this is consistent with the perspective that adults not only teach at children's level of ability, but also aim to encourage higher-level learning (Danis et al., 2010). Given that parents contribute to children's higher-level thinking, it follows that when parents engage in more talk beyond the storybook, children's productions also become more abstract (for example, by making predictions and inferences, or relating to life experiences).

Previous work has also shown that the socio-emotional atmosphere of storybook reading is associated with children's participation (Skibbe et al., 2010). Skibbe and colleagues (2010) found that when mothers read with their 4.5-year-old children, maternal supportive presence

(e.g., providing positive comments, allotting time for the child to respond, providing physical or verbal support, acknowledging their child's accomplishments) was positively related to children's participation; higher maternal supportive presence was associated with higher child participation. The researchers highlighted that strictly exposing children to books is not sufficient, and that how mothers engage with children during the reading session can impact children's engagement (Skibbe et al., 2010).

My findings are in accordance with the socio-emotional perspective of book-reading. Consistent with my hypothesis that higher parental engagement would be associated with higher child engagement, parents' engagement accounted for unique variance in children's engagement. When parents exhibited more facial expressions, gestures, eye contact, proximity, and interest in the story, their children engaged in more of these behaviours, too. In previous research conducted by Martin-Chang and Gould (2012), children's engagement was positively associated with dyads' non-immediate talk and illustration production. In my study, these findings were replicated, such that more non-immediate talk and illustration production by parents was linked with higher levels of child engagement. A novel contribution of the present study was the addition of parent engagement. Based on my results, parents' engagement contributed unique variance in children's engagement, and children's engagement contributed unique variance in parents' engagement, beyond the verbal book-related themes, suggesting that both parents and children served as active members during the reading session.

The socio-emotional atmosphere of the reading session is supported from an attachment framework (e.g., Bus & van IJzendoorn, 1992; Bus et al., 1997; Bus & van IJzendoorn, 1997). Past experiences with caregivers are associated with children's learning, such that those with more secure attachment are more inclined to explore unfamiliar aspects of their environments

(e.g., being open to representational meanings in storybooks, showing trust to their caregivers as teachers) (Cline & Edwards, 2016). Previous research has demonstrated that secure attachment is positively linked to higher quality reading sessions between parents and children (Bus & van IJzendoorn, 1992; Bus et al., 1997; Bus & van IJzendoorn, 1997). These findings underpin the important role of the parent-child relationship and the socio-emotional environment provided to children during shared book-reading sessions. As demonstrated in my results, there seemed to be an interactional synchrony, an attuned, rhythmic activity, between caregiver and child (Bernieri & Rosenthal, 1991). Children are sensitive to imitation during interactions, such that more imitation provided by the receiver is associated with higher attentiveness and interest from children (Bigelow, Maclean, Proctor, Myatt, Gillis, & Power, 2010). My findings show evidence of a synchrony between parents and children, where each of them uniquely contributed to each other's engagement to maintain a positive climate during the reading session.

Based on the literature, I expected that parents' meaning-related talk and children's language and literacy skills would be associated. I was surprised, therefore, that parents' meaning-related talk was not associated with children's receptive vocabulary and parents' print referencing was not associated with children's reading achievement. Previous research has demonstrated significant positive associations between parents' meaning-related talk and children's vocabulary (e.g., Han & Neuharth-Pritchett, 2015; Hindman et al., 2008; Reese & Cox, 1999; Whitehurst et al., 1994). A number of studies have also demonstrated a positive link between parents' print referencing and children's code-related skills (e.g., Han & Neuharth-Pritchett, 2015; Justice & Ezell, 2002; Piasta et al., 2010). This raises the question of why I was not able to replicate these results.

One plausible reason may have been my sample. Because my sample included English and bilingual dyads, I may not have been accurately assessing children's full range of vocabulary. Specifically, because I only assessed English vocabulary, the full vocabulary of the bilingual children may have been underestimated. Similarly, because a French-speaking sample was included in my study, a print exposure measure with only English titles may not have been sensitive enough to examine children's book exposure at home. Bilingual children reading in both English and French may have been put at a disadvantage, given that only English titles were available. In turn, the accuracy of their print exposure may have been underestimated. Additionally, other studies examining meaning-related talk and print referencing included children who were in preschool or younger (e.g., Reese & Cox, 1999; Whitehurst et al., 1994; Ezell & Justice, 2000; Justice & Ezell, 2002). Perhaps children in grade school were receiving vocabulary and reading instruction. If this were the case, the relations between these factors may no longer have been present, making it difficult to assess the effects of meaning-related and print-related talk on vocabulary and reading achievement.

Limitations

As with every study, a few limitations warrant discussion. For one, the sample in my study came from high-income families. It is well documented that SES is associated with parents' interactions with children during book-reading sessions (Whitehurt & Lonigan, 1998). For example, parents from middle-income economic status tend to engage in more non-immediate talk than those from lower-income economic status (Baker et al., 2001). Future work should address this by incorporating families of different economic backgrounds, in order to determine how types of talk and engagement may change with different samples.

Another methodological issue to consider is that the work in the present study was correlational; therefore, in spite of the reciprocal association in parents' and children's non-immediate talk and engagement, no causality can be inferred. It could be that third order factors such as SES, children's ages, and parents' education are influencing both children's and parents' talk and engagement (DeBaryshe, 1993; Neuman, 1996; Sénéchal & LeFevre, 2002; Sénéchal et al., 1996). Yet although this could have been the case, the fact remains that when these particular factors were considered in the present study, they were not correlated with parents' and children's types of talk and engagement.

Further, the sequence of exchanges was not taken into account when coding the types of talk. Therefore, whether parents initiated the type of talk or whether children did, was not examined. Including this information along with taking into account both parents' and children's questions and responses would provide valuable insight as to how the reciprocity of both talk and engagement are initiated and maintained during book-reading sessions. Another fruitful avenue of research would be to examine how instructing parents and children to engage in different verbal and noverbal behaviours would change the dynamics of the reading sessions.

Strengths

Much of the previous work on storybook reading focuses on parents' non-immediate talk only, despite the possibility that children's contributions might be affecting interactions within the parent-child dyad (Hammett et al., 2003). For instance, in the studies mentioned above, only adults' prompts to children were considered (e.g., Luo & Tamis-LeMonda, 2017; Zucker et al., 2010). A strength of the present study was that I took into account parents' and children's prompts and responses. By examining prompts and responses from both parents and children, the unique verbal contributions of each party were recognized.

Furthermore, my study included a more intricate coding scheme for both parent and child behaviours, which included verbal and nonverbal behaviours. Instead of using a rating scale like much of the previous work on storybook reading (e.g., Baker et al., 2001; Bingham, 2007; Ortiz et al., 2001; Skibbe et al., 2010; Sonnenschein & Munsterman, 2002), in the current study, I obtained frequency counts of each verbal and nonverbal behaviour, in order to detect variability in behaviours between parents and children. Finally, to add to the work of Martin-Chang and Gould (2012), I included a parent engagement measure, and instead of only assessing how parents' meaning-related and print-related talk were associated with children's engagement, I was able to determine how much variance children's engagement contributed to parent's engagement in the reading session. This allowed me to conclude that both the role of parents and children are both critical to the emotional climate of book-reading sessions.

Conclusion and Implications

Taken together, the results of my study provide important implications for parents and children. Given that there is a reciprocal link between parents' and children's verbal behaviours and engagement, it seems that the environment that parents provide for children is critical for children's verbal engagement beyond the story, as well as children's enjoyment in the activity (Baker et al., 2001). In recognizing that children also play a role in the reading session, it should be noted that parents can learn which types of talk are most beneficial for their children (Saracho & Spodek, 2010). Intervention studies have been successful in teaching parents how to read with their children; for instance, Morgan and Goldstein (2004) demonstrated that after teaching parents how to use non-immediate talk, not only did they engage in more of it at a later time, their children also followed, and demonstrated the use of non-immediate talk.

Furthermore, reading to children in an engaging manner is important, as “it can promote a love for reading which is even more important than improving specific literacy skills” (Duursma, Augustyn, & Zuckerman, 2008, p. 556). As Saracho and Spodek (2010) state, parents should be made aware of what types of book-reading practises impact children’s engagement and enjoyment during storybook sessions. Along the same lines, when parents create high-quality literacy experiences, it helps lead to their children adopting positive attitudes and behaviours about story structure, language, and reading (Saracho & Spodek, 2010). Therefore, although storybook reading between parents and children is always encouraged, strictly reading the text may not be leveraging all the opportunities storybook reading has to offer. A high-quality environment is necessary, in order to foster children’s positive behaviours and engagement during these reading sessions.

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Appendix A

Participant Demographics Questionnaire

Participant number: _____ Questionnaire 1
Please write your start time upon starting to complete the questionnaire on page 2 and record the end time on the final page upon completing the questionnaire.
How old are you? _____
Please indicate if you are a man _____ or woman _____.
Please indicate your current marital status:

Married	
Single	
Committed relationship	
Common-law	
Separated	
Divorced	
Widowed	
Other (please specify):	

Because the school system differs in various parts of Canada, we ask that you list your total years of education in each of the following (e.g., 7 years in elementary, 4 years in high school etc.):

Elementary School _____
High School _____
CEGEP _____
College _____
University _____
Other (please specify): _____
HIGHEST DEGREE OF EDUCATION ATTAINED: _____

Please check off your family's annual income:

Less than $10,000.00 ____
Between $10,000.01 and $30,000.00 ____
Between $30,000.01 and $50,000.00 ____
Between $50,000.01 and $70,000.00 ____
Between $70,000.01 and $90,000.00 ____
Between $90,000.01 and $110,000.00 ____
Between $110,000.01 and $130,000.00 ____
Between $130,000.01 and $150,000.00 ____
Greater than $150,000.01 ____

What languages does your child speak at home?

English: _____
French: _____
Other (please specify): _____

Please list the birthdates and gender of your child/ren (dd/mm/year), starting with your oldest. Please indicate the child we will be working with in Kindergarten or Grade 1 with a star.

e.g., 1) 06/06/01, boy 2) 18/07/04, girl *3) 01/08/07, boy
1) _____ 2) _____ 3) _____

4) _____ 5) _____ 6) _____

7) _____ 8) _____ 9) _____

Appendix B

Title Recognition Test

Children`s Title Checklist

Below you will find a list of names. Some of the titles are popular children`s books and some are not. Please read the titles and put an **'x'** beside those that you recognize as coming from real books. **Please do not guess**. Remember, some of the titles are not real, so guessing can be easily detected. Once again, **please do not consult outside resources**.

Children's Title	"x" real Title		Children's Title	"x" real Title
Are you my mother			Good Night Moon	
Backyard Safari			Grandma and the Pirates	
Bartholomew and the Oobleck			Guess How Much I Love You?	
Because I love you			Harold and the Purple Crayon	
Bedtime for Frances			House on East Eighty-Eighth Street	
Biscuit			If You Give a Pig a Pancake	
Blame it on Billy			Jamberry	
Blueberry Kazoo			Kofi and his Magic	
Brown Bear, Brown Bear, What do you see?			Moo, Baa, La, La, La	
Chicka Chicka Boom Boom			My Friend the Mailman	
Chrysanthemum			Oh, the Places You'll Go	
Clean up, Carter!			Open Up	
Click Clack Moo			Runaway Bunny	
Cootie Catchers			The Adventures of Chatterer the Squirrel	
Corduroy			The Clock with No Hands	
Cups for Sale			The Colors of Me	
Danny and the Dinosaur			The Fall of Freddie and the Leaf	
Dog Heaven			The Going to Bed Book	
Down by David's Pond			The Last of the Really Great Whangdooles	
Down by the Sea			The Muffin Maker	
Eloise			The Rabbit Acrobats	
Father Bear Comes Home			The Story of Ferdinand	
Flat Stanley			Wacky Wendell	
Follow The Drinking Gourd			What Rhymes with Orange?	
Gerals McBoing Boing			Where the Wild Things Are	

Please write down your end time: _____

Thank you for your participation!

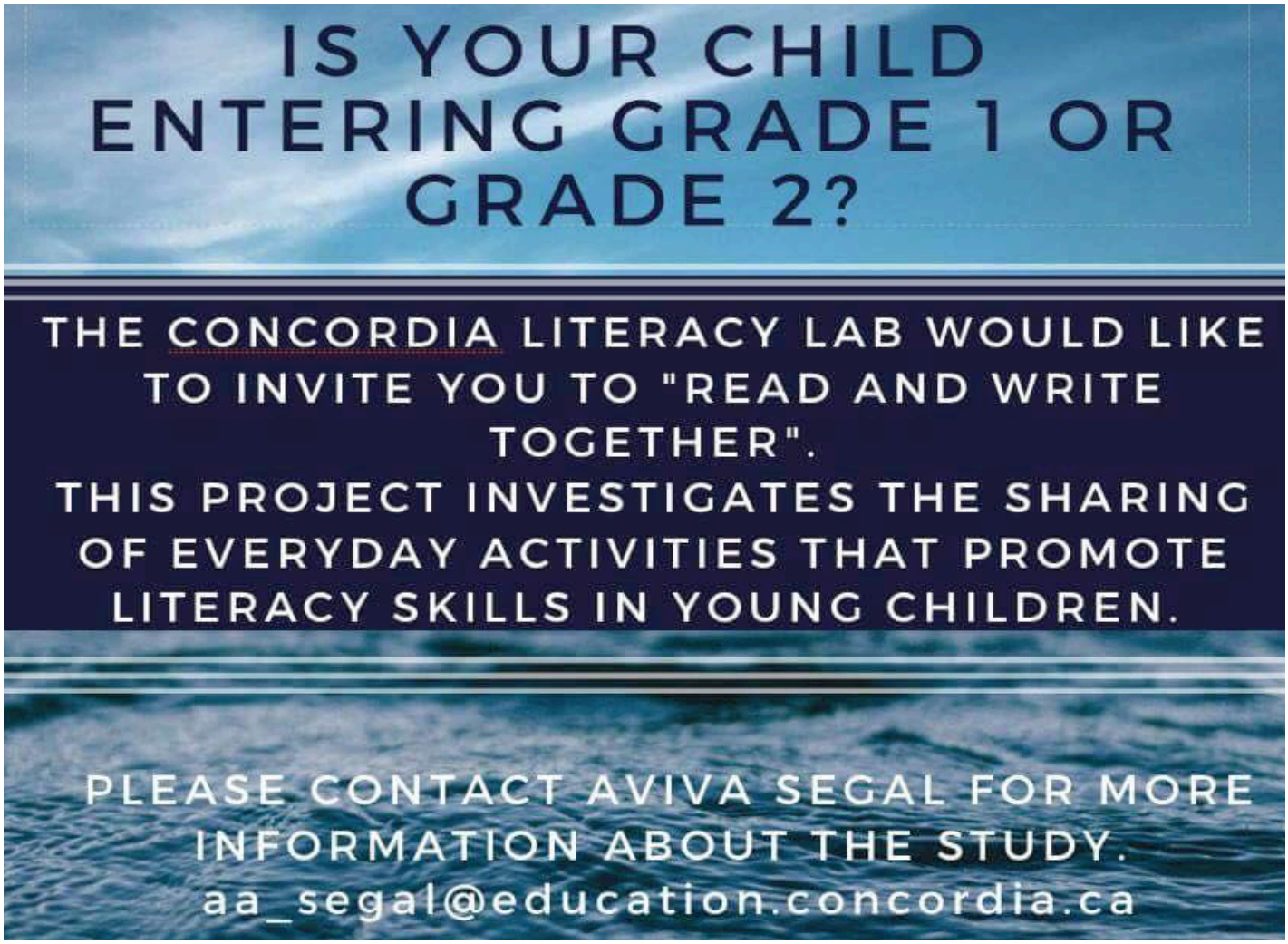
Appendix C

Flesch-Kincaid Grade Levels for Selected Storybooks

Storybook Title	Author, Year	Flesch-Kincaid Grade Level
Lost and Found	Jeffers, 2005	2.5
Stuck	Jeffers, 2011	3
The Incredible Book Eating Boy	Jeffers, 2007	3
This Moose Belongs to Me	Jeffers, 2012	4.9
Up and Down	Jeffers, 2010	3.9

Appendix D

Recruitment Flyer


IS YOUR CHILD ENTERING GRADE 1 OR GRADE 2?
THE CONCORDIA LITERACY LAB WOULD LIKE TO INVITE YOU TO "READ AND WRITE TOGETHER".
THIS PROJECT INVESTIGATES THE SHARING OF EVERYDAY ACTIVITIES THAT PROMOTE LITERACY SKILLS IN YOUNG CHILDREN.
PLEASE CONTACT AVIVA SEGAL FOR MORE INFORMATION ABOUT THE STUDY.
aa_segal@education.concordia.ca

Appendix E

Parent Consent Form

INFORMATION AND CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Study Title: Reading and Writing Together
Researcher: Aviva Segal
Researcher's Contact Information: aa_segal@education.concordia.ca
Faculty Supervisor: Sandra Martin-Chang
Faculty Supervisor's Contact Information: (514) 848-2424 x8932, or email at smartinc@education.concordia.ca
Source of funding for the study: NSERC# N01519 (2012-2017)

You are invited to participate in a research study entitled *Reading and Writing Together*. Please read this form carefully before deciding if you want to participate. If there is anything you do not understand, or if you want more information, please ask the researcher (Aviva Segal).

A. PURPOSE

The purpose of our study is to observe parents sharing every day activities that promote literacy skills with their young children. These activities include parents helping their children: read a story; write a card; and study for a spelling test. Of particular interest, we will investigate whether different hobbies (such as reading for pleasure) or skills (ability to isolate and identify sounds in speech) influence how parents work with their children. We hope to learn about optimal parenting practices from observing parent-child exchanges, so that we can later share these insights with the wider community.

B. PROCEDURES

If you participate, you will be asked to:

1) Provide consent for you and your child to participate in this research project.
2) Complete a short demographic questionnaire at home.
3) Participate along with your child in a study investigating how parents work with children in Kindergarten and Grade 1 on reading and writing tasks. The session will include:

Completing a survey, including several short checklists, while an investigator does some tasks with your child (e.g., matching pictures to words).
Reading a storybook to your child.*
Having your child read to you.*
Helping your child write a card.*

* These activities will be videotaped in order to transcribe verbal and nonverbal exchanges from coding purposes.

It is our hope that your child will enjoy practicing key literacy concepts involving joint reading and writing tasks. In addition, your child's participation will add to our understanding of how reading and spelling develop in young children. The findings generated from such studies are influential in the creation of educational programs, and your child's involvement would be extremely appreciated.

C. RISKS AND BENEFITS

There are no risks to your child with regard to his/her involvement in this study.

D. CONFIDENTIALITY

By participating, you agree to let the researcher use the information gathered during testing. This includes allowing us to access to your and your child's results and viewings of the videotaped sessions.

No one else will be allowed to to access the information, including members of your child's school. Only people directly involved in conducting the research, will be able to access the information and the information will only be used for the purposes of the research described in this form.

To verify that the research is being conducted properly, regulatory authorities might examine the information gathered. By participating, you agree to let these authorities have access to the information. That said, the information gathered will not be identified by the names of those who participate. This means that the information will be identified by a code. Only the researcher will have a list that links the code to your name, which will not be released.

The information will be protected by keeping data in a locked room at all times. We will destroy the information five years after the end of the study. Only group data

from this project will be published; all information gathered, including videotapes taken of you and your child, will only be used for the sake of compiling data and sharing it with a scientific audience. You and your child will never be identified by name.

In the highly unlikely event of child abuse, we are legally required to disclose the information, despite what is written in this form.

E. CONDITIONS OF PARTICIPATION

If you sign this form, you can still stop participating at any time. There are no negative consequences for not participating, stopping in the middle, or asking us not to use your information. You can also ask that the information you provide not be used, and your choice will be respected. If you decide that you do not want us to use your information, you must tell the researcher before
October 7,2016.

If you choose to have the session conducted at the university, you will be given **$20** compensation to cover the cost of mileage and parking fees. In addition, regardless of study location, your child will receive **$10** or a gift of approximately equivalent value. Before working with the investigator, your child will be asked whether he/she chooses to do so. If your child agrees to participate, your child will be advised that he or she can stop participating at any point. To make sure that research money is being spent properly, auditors from Concordia or outside will have access to a coded list of participants. It will not be possible to identify you from this list.

F. PARTICIPANT'S DECLARATION

a) I have read and understood this form. I have had the chance to ask questions and any questions have been answered. **I agree to participate** in this research under the conditions described.

NAME (please print)_____

SIGNATURE _____

DATE _____

b) I have read and understood this form. I have had the chance to ask questions and any questions have been answered. **I agree to have my child participate** in this research under the conditions described.

NAME OF CHILD (please print)_____

YOUR SIGNATURE _____

DATE _____

If you have questions about the scientific or scholarly aspects of this research, please contact the researcher (Aviva Segal). You may also contact her faculty supervisor (Dr. Sandra Martin-Chang). Their contact information is on page 1.

If you have concerns about ethical issues in this research, please contact the Manager, Research Ethics, Concordia University, 514.848.2424 ex. 7481 or oor.ethics@concordia.ca.

Appendix F

Child Assent Form

Hello. I would like to do some activities with you. Some of them will seem like things you do in school but some are like matching games. You can ask for a break any time you want one. You can also ask to stop at any time.

Do you understand this? Circle the smiley face if you do and the sad face if you don't.

Do you want to work with me today? Circle the smiley face if you do and the sad face if you don't.

Appendix G

Coding Scheme for Parent Behaviours

Behaviours	Definitions	Examples
Immediate Talk	Verbal behaviours about immediate story content.	*"He threw a duck in the tree."* (Story event)
Non-Immediate Talk	Verbal behaviours beyond the story content.	*"What do you think happened to the bucket of paint?"* (Prediction)
		"This you're going to learn in cegep or university." (Text-to-self)
		"He's from Belfast, which is a place in Ireland." (Text-to-world)
		"What's the other book we have?" (Text-to-text)
		"Animals that work and live alone." (Providing a definition for the word "solitary")
		"And no one else will be able to borrow the books that aren't gonna come back." (Making an interpretation about a story event)
Print Referencing	Verbal and nonverbal behaviours corresponding to the text in the storybook.	*"That's the word eat."* (Verbal) *Pointing to print, tracking print with finger* (Nonverbal)
Illustration Production	Verbal and nonverbal behaviours corresponding to the illustrations in the storybook.	*"That looks like he's doing a show."* (Verbal) *Pointing to illustrations* (Nonverbal)
Engagement	Verbal and nonverbal behaviours showing interest in the storybook reading session.	*Smiling, laughing, eyebrow animation* (Facial expressions)
		Eye contact (Direct and checking behaviour)
		Hugging, putting arm around child (Touch)
		Leaning head towards child (Proximity)
		*"This was a funny one!", "I think we should buy this book." (*Verbal interest in storybook)
		Shaking head, nodding head in relation to story event (Nonverbal interest in storybook)

Appendix H

Coding Scheme for Child Behaviours

Behaviours	Definitions	Examples
Immediate Talk	Verbal behaviours about immediate story content.	*"South Pole."* (Reponse to mother's question: "Where's his home?")
Non-Immediate Talk	Verbal behaviours beyond the story content.	*"It got stuck in the tree."* (Prediction) *"I have three [goldfish]."* (Text-to-self) *"The penguin lives where it's cold."* (Text-to-world) *"Hey, I think I know this, the first book of this!"* (Text-to-text) *"It means he wasn't good."* (Definition) *"That's gonna take really long."* (Making an interpretation about a story event)
Print Referencing	Verbal and nonverbal behaviours corresponding to the text in the storybook.	*"That's a p?"* (Verbal) *Pointing to print, tracking print with finger* (Nonverbal)
Illustration Production	Verbal and nonverbal behaviours corresponding to the illustrations in the storybook.	*"The penguin's right there!"* (Verbal) *Pointing to illustrations* (Nonverbal)
Engagement	Verbal and nonverbal behaviours showing interest in the storybook reading session.	*Smiling, laughing, eyebrow animation* (Facial expressions) *Eye contact* (Direct and checking behaviour) *Putting arm around parent* (Touch) *Leaning head towards parent* (Proximity) *"Seriously?!" "Love this story!" (*Verbal interest in storybook) *Shaking head, nodding head in relation to story event* (Nonverbal interest in storybook)

Appendix I

Storybooks Read by Dyads

Storybook Title	*N*	%
Lost and Found	17	28.3
Stuck	14	23.3
The Incredible Book Eating Boy	17	28.3
Up and Down	5	8.3
This Moose Belongs to Me	7	11.7

Note. $N = 60$.