Examining Shared Storybook Reading in Childhood and Reading for Pleasure in Adolescence

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ABSTRACT

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Brittany Tremblay

The numerous benefits of print exposure are unquestionable as they have been widely studied among children and adults (Cunningham & Stanovich, 1990, 1991, 1997, 2001; Mol & Bus, 2011). However, despite these benefits, some individuals choose to engage in reading as a leisure activity and some do not. The social interactions of shared storybook reading have contributed to children's favorable experiences with reading up to Grade 4 (Sénéchal, 2006), yet the role that shared storybook reading plays in print exposure during high school has not been examined. Therefore, the present study investigated shared storybook reading in childhood and current print exposure in English and in French with 45 adolescent-parent dyads from the greater Montréal area. Parents and adolescents completed a retrospective Title Recognition Test (TRT), where they identified storybook titles they recognized from a list of real titles and foils. Adolescents also completed an Activity Preference Questionnaire and an Author Recognition Test (ART), to assess their current print exposure, and literacy measures to assess their spelling, word-recognition, and word reading skills. The results of hierarchical multiple regressions demonstrated that adolescents' TRT scores in English accounted for unique variance in their print exposure scores, as measured by the ART. Additional regressions demonstrated that the ART was an important contributor to literacy skills. The findings underline the importance of parents engaging in shared storybook reading with their children. These early social experiences relate to later reading preferences and skills in adolescence.

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Literature Review and Statement of the Problem

Print surrounds individuals in their daily lives, therefore the importance of reading goes without question (Mol & Bus, 2011). Research has discovered a myriad of benefits related to print exposure. Gains associated with reading have been observed in spelling, vocabulary, verbal fluency, general knowledge, and cultural knowledge (Cunningham & Stanovich, 1991, 1997, 2001; Sparks, Patton, & Murdoch, 2014; Stanovich, 1986; Stanovich & Cunningham, 1992). Similarly, reading volume is linked to increases in academic performance in students ranging from preschool to university (Mol & Bus, 2011). Reading fiction specifically, has also been correlated with increases in empathy, perspective taking (Guarisco & Freeman, 2015; Mar, Oatley, Hirsh, dela Paz, & Peterson, 2006; Nomura & Akai, 2012), and interpersonal sensitivity (Fong, Mullin, & Mar, 2013), as well as decreases in gender stereotyping, sexual conservatism (Fong, Mullin, & Mar, 2015) and prejudice (Vezzali, Stathi, Giovannini, Capozza, & Trifiletti, 2015). Despite these benefits, electing to read outside the parameters of school or work remains a personal decision. Hence, the question merits further research, why do some individuals engage in leisure reading, while others do not? One of the answers may lie in shared storybook reading. Here, I will explore the relationship between shared storybook reading in childhood and print exposure in adolescence in English and in French.

Print Exposure

The amount of reading individuals do over the lifetime is often referred to as print exposure (Cunningham & Stanovich, 1990, 1997; Mol & Bus, 2011; Stanovich & West, 1989). Print exposure was first assessed by researchers using self-report questionnaires; however, participants often felt enticed to respond in socially desirable ways, thereby confounding the results (Paulhus, 1984). To reduce the complication of social desirability, Stanovich and West

(1989) developed the Author Recognition Test (ART). The ART originated as an amalgamated list of 50 best-selling authors from various genres in fiction and non-fiction literature. Stanovich and West (1989) avoided the inclusion of any authors who were commonly studied in school because the intention was to indirectly assess free-reading volume and not reading required for school. The ART also included foils to detect when participants were guessing; in the original ART, names of members of the *Reading Research Quarterly* editorial board were used. The ART was first piloted with 61 undergraduate psychology students who were asked to identify authors they recognized from an alphabetical list comprising the names of 50 authors and 50 foils. The participants were told that guessing could be detected due to the presence of foils. Stanovich and West (1989) found that the ART predicted variance in spelling abilities and comprehension skills.

A few years later, Stanovich and Cunningham (1992) conducted a study with 300 undergraduate students; they assessed participants' print exposure using the ART, and its relationship with their abilities on cognitive tasks. Print exposure was positively correlated with vocabulary, fluency, spelling, and cultural knowledge outcomes (Stanovich & Cunningham, 1992). Extending on this line of research, Stanovich, West, and Harrison (1995) considered whether age played a role in the development and maintenance of knowledge gained from print exposure. They administered several tasks and print exposure measures, including the ART, to college students and older individuals (M_{age} =79.9 years). In both age groups, print exposure significantly predicted vocabulary and declarative knowledge scores (Stanovich et al., 1995), suggesting that print exposure is linked to knowledge acquisition even when age is accounted for.

In a similar vein, Stanovich and Cunningham (1993) assessed 268 undergraduate students' print exposure, reading comprehension, mathematical abilities, and five general knowledge abilities. They found that students who scored higher on the ART demonstrated better reading comprehension and mathematical abilities than those who scored lower on the ART (Stanovich & Cunningham, 1993). In addition, students with higher ART scores had better overall grades as measured by their grade point average in high school. Interestingly, students with low cognitive abilities, but high print exposure, scored equally as well as, or better than students with high cognitive abilities and low print exposure on all five of the general knowledge measures (Stanovich & Cunningham, 1993). The authors argued that this supported the link between print exposure and knowledge, in that the more individuals read over their lifetime, the more general knowledge they were likely to develop and maintain.

In a more recent study, Sparks, Patton, Ganschow, and Humbach (2012b) explored whether first language skills such as phonemic awareness, word decoding, spelling, reading comprehension, vocabulary, and listening comprehension, differentiated students of high, average, and low print exposure. They conducted a longitudinal study with 54 students for ten years. Data were collected at five different time points between Grades 1 and 10. The findings revealed that students' phonemic awareness, word decoding, and spelling in their first language best differentiated students in each of the three print exposure groups (Sparks et al., 2012b). Unsurprisingly, students with the strongest skills were in the high print exposure group, those with the lowest were in the low print exposure group, and those in the middle fell within the average print exposure group, suggesting that these three skills in childhood contribute to levels of print exposure later in adolescence. Additionally, there was a significant difference between students' vocabulary, reading comprehension, decoding, phonemic awareness, and spelling

scores in the high and low groups. Furthermore, students with high print exposure performed significantly better in terms of classroom achievement than students in both the average and low print exposure groups (Sparks et al., 2012b).

The ART is an effective predictor of many cognitive skills because it acts as a proxy for reading over the lifetime; simply put, knowing author names is an indication of reading behavior (Echols, West, Stanovich, & Zehr, 1996). To further examine this link, Martin-Chang and Gould (2008) conducted a study with the ART to tease apart recognizing authors names from the experience of reading their books. They refined the ART to include contemporary authors, resulting in 75 author names and 75 foils and named it the Author Recognition Test Revised (ART-R; Martin-Chang & Gould, 2008). A column was also added, allowing participants to indicate if they recognized the author name through their personal reading experience, also known as primary print knowledge, or from other sources identified as secondary print knowledge.

One hundred and seventy-one undergraduate students completed reading ability measures (vocabulary test, reading comprehension, and reading rate), and the ART-R. Martin-Chang and Gould (2008) found a significant correlation between personal reading experience, vocabulary, comprehension, and reading rate. Likewise, secondary print knowledge, which was essentially a measure of memory of author names, displayed positive correlations with vocabulary and comprehension, but not with reading rate. Interestingly, primary print knowledge was significantly linked to preferences for reading, but secondary print knowledge was not (Martin-Chang & Gould, 2008). Thus, these findings illustrated how primary print knowledge and secondary print knowledge had varying relationships with skills and preferences.

With regards to younger participants, Cunningham and Stanovich (1990) proclaimed that reading ability is related to print exposure, noting how more skilled readers are exposed to more print. This cyclic nature that encompasses reading ability and print exposure illuminates how children who are better readers, read more, and consequently acquire more print exposure, which in turn increases their reading abilities (Cunningham & Stanovich, 1990). Building on this, Cunningham and Stanovich (1997) assessed students' reading and cognitive abilities in the first grade and again ten years later in the eleventh grade. After controlling for cognitive ability, the authors found that reading ability in the first grade predicted reading ability in the eleventh grade, as well as reading comprehension, vocabulary, and general knowledge (Cunningham & Stanovich, 1997). As such, they argued that reading early on had an impact on reading habits ten years later; those who began reading earlier, developed a habit of reading, regardless of their level of reading comprehension.

More recently, Sparks and colleagues (2014) replicated Cunningham and Stanovich's (1997) influential study to determine whether reading skills in the early grades had an impact on reading comprehension, knowledge, and print exposure in Grade 10. Fifty-four first grade students completed measures pertaining to reading, spelling, vocabulary, listening comprehension, and cognitive ability throughout the years. They were followed until Grade 10 when they completed reading, language, cognitive ability, general knowledge, and print exposure tasks. The findings revealed that when IQ was controlled for in Grade 10, print exposure accounted for a vast amount of declarative knowledge (Sparks et al., 2014). These results are remarkable as they assert that parents and teachers can have an important influence on children's later abilities by encouraging them to read for fun early on.

To explore whether print exposure also factored in to second language learning, Sparks, Patton, Ganschow, and Humbach (2012a, 2012b) investigated whether print exposure in a first language predicted aptitude and proficiency in a second language; these findings confirmed the importance of reading in a first language. Fifty-four high school students completed two years of study in a second language (French, German, or Spanish). Their first language and second language skills were assessed (Sparks et al., 2012a). Students completed the ART, Magazine Recognition Test (MRT), and Cultural Literacy Test (CLT) to assess print exposure in their first language. With regards to their second language aptitude and proficiency, scores on reading comprehension, word decoding, spelling, listening/speaking, and writing were obtained (Sparks et al., 2012a). The ART and MRT contributed variance to reading comprehension and proficiency in their second language, and the CLT contributed variance to all second language measures except for spelling (Sparks et al., 2012a). In fact, Sparks and colleagues (2012b) contended that students' print exposure in their first language was more strongly correlated with their proficiency in a second language than general intelligence. Taken together, Sparks et al.'s (2012a, 2012b) findings reiterate the importance of print exposure and offer support not only for first language skills, but for second language aptitude and proficiency as well.

Assessing children's print exposure. Cunningham and Stanovich (1990) developed a checklist to assess children's print exposure. Similar to the ART, it was designed to measure the amount of reading children engaged in outside of school by having children identify storybook titles they recognized from a list of real titles and foils, which prevented participants from claiming they knew all of the titles. Cunningham and Stanovich's (1990) study administered one such checklist to 51 Grade 3 and 47 Grade 4 students, who were asked to identify children's book titles that they recognized. Results showed that differences in students' print exposure

scores were related to their orthographic processing efficiency (Cunningham & Stanovich, 1990). Cunningham and Stanovich (1991) affirmed the construct validity of a similar checklist in a later study. They found that print exposure of fourth, fifth, and sixth graders predicted their spelling abilities, verbal fluency, and general world knowledge (Cunningham & Stanovich, 1991). Similarly, Cipielewski and Stanovich (1992) utilized a checklist to assess reading volume and noted that print exposure did not only rely on reading ability, but also contributed to its improvement.

Along the same lines, Echols et al. (1996) completed a two-year longitudinal study with 157 students in Grades 4, 5, and 6 to examine if two checklists, one containing book titles and the second comprising children's authors predicted growth in verbal cognitive abilities. There was a significant correlation between print exposure, vocabulary, verbal ability, and declarative knowledge. In fact, the ability to identify book titles predicted growth in vocabulary over the two years and was a more dependable predictor than students' ability to identify children's authors (Echols et al., 1996).

In France, Ecalle and Magnan (2008) created a French checklist to examine the relationship between print exposure and literacy skills with older children in Grades 4 and 5. Interestingly, after controlling for age and reading ability, print exposure scores accounted for unique variance in children's vocabulary, spelling, and word-recognition skills, in both grades. Ecalle and Magnan (2008) asserted that the positive correlations served as indicators that the checklist with book titles was valid. Thus, the importance of reading volume among children is evident, but how do children become adolescents who elect to read?

Home Literacy Environment

Parents have a profound influence on the literacy environment surrounding their children

before they can read (Baker, Scher, & Mackler, 1997; Flack, Field, & Horst, 2018; Nyhout & O'Neill, 2013; Sénéchal & LeFevre, 2002, 2006, 2014; Weinberger, 1996). Sénéchal and LeFevre (2002) proposed the Home Literacy Model (HLM), which divides the activities that occur in the home into two types of activities, namely formal and informal activities. Parental involvement in both types of literacy activities foster diverse skills (Sénéchal & LeFevre, 2002). When parents engage in formal literacy activities with children, they focus on explicitly teaching children about print (Hood, Conlon, & Andrews, 2008; Manolitsis, Georgiou, & Tziraki, 2013; Sénéchal, 2006; Sénéchal & LeFevre, 2002, 2014). For instance, parents who teach their children about letter sounds and letter names are teaching their children to interact with print. These formal literacy activities are associated with children learning to read and write (Sénéchal & LeFevre, 2002). They are generally assessed with parental reports, where parents indicate the frequency with which they teach these skills (Sénéchal & LeFevre, 2002).

In contrast, informal literacy activities encompass parent-child interactions where children are exposed to print indirectly (Manolitsis et al., 2013; Sénéchal & LeFevre, 2002, 2014) and where language development is promoted (Flack et al., 2018; Nyhout & O'Neill, 2013; Sénéchal, 2006). When parents model the act of reading through informal interactions such as shared storybook reading, the focus is on the meaningful context in which parent and child interact, and not the explicit teaching of reading (Arya, McClung, Maul, & Cunningham, 2014; Baker et al., 1997; Button & Johnson, 1997). According to Vygotsky's Sociocultural Theory, children develop behaviors and learn norms vital to success, based on their social interactions with more knowledgeable individuals (Vygotsky, 1978). John-Steiner and Mahn (1996) lend support to Vygotsky's theory by postulating that children's knowledge of literacy in school is shaped by earlier home experiences that expose them to print, and other literacy activities. Parents

modeling enjoyment while reading is representative of Vygotsky's scaffolding by more competent individuals. Hence, through the social interactions of shared storybook reading, parents may be fostering a love of reading and an appreciation for literacy (Baker et al., 1997; Martin-Chang & Gould, 2012; Weinberger, 1996). If so, when reading is valued in their community, children's desire to read for pleasure may flourish (thereby increasing their print exposure once they learn how to read).

In order to explore home and literacy practices from an earlier age than past research had addressed, Weinberger (1996) conducted a longitudinal study with 42 children at ages three, five, and seven. Weinberger interviewed parents of the children when they were three years old and later assessed children's vocabulary, writing, letter knowledge, and access to storybooks at home and in school at age five. At age seven, parents and children were interviewed and children's reading levels were assessed. The author found a positive correlation between early home experiences and later literacy development; children who had a favorite book at age three read at a significantly higher level at age seven, than children who did not have a favorite book (Weinberger, 1996). Seeing parents read at home and being read to from an early age were additional home factors that contributed to children's literacy development. Thus, Weinberger (1996) highlighted the importance of the interactions taking place during early shared storybook reading and its impact on subsequent reading ability. Along the same lines, Baker et al. (1997) noted how enjoyable interactions during shared storybook reading contributed to feelings about reading and a propensity toward future reading.

To assess the informal literacy activity of shared storybook reading before children are reading themselves, parents can complete the Title Recognition Test (TRT; Sénéchal, 2000), and the ART. Scores on the TRT are to be taken as a proxy of how much parents read to their

children, whereas scores on the ART reflect how much parents read in their leisure time. Sénéchal (2000) developed the TRT for children's French storybook titles by consulting teachers, librarians, and bookstore owners. An effort was made to incorporate books that were available in libraries and to avoid including fairy tale books and books adapted to film. Eighty preschool children and their parents (65% of whom spoke French at home) completed print exposure measures; the children completed a different version of the TRT wherein they were shown pictures of main characters of storybooks and asked to name the character and the title of the book the character was from (Sénéchal, 2000). Children's performance on this task was significantly correlated with their vocabulary scores. In parallel, parents completed the standard TRT with storybook titles in French. The number of book titles parents recognized was positively associated with the number of book titles their children knew and the number of children's books found in the home (Sénéchal, 2000). In addition, parents with greater knowledge of children's book titles reported reading to their children at a younger age than those with less knowledge of children's literature. This was the first study to demonstrate these correlations in a French population, but these children were not followed to see how their early experiences affected their subsequent reading habits.

In sum, the home literacy environment in early childhood plays a catalyzing role in children's exposure to print (Flack et al., 2018; Manolitsis et al., 2013; Sénéchal, 2000). In fact, the number of books in the home can also be taken into consideration with respect to print exposure. Sikora, Evans, and Kelley (2018) conducted a retrospective study with 106,585 adults from 31 societies and found adults who remembered growing up with larger home libraries at age 16 had higher literacy, numeracy, and technological skills in adulthood. Researchers found that shared storybook reading with a parent contributed to children's feelings about reading

(Baker et al., 1997; Weinberger, 1996). Therefore, it could be argued that shared storybook reading builds the foundation upon which print exposure rests. These early social interactions may illustrate one possible difference between those who love to read and those who do not. However, the question remains as to how shared storybook reading affects children and their subsequent desire to read in their leisure time.

Shared Storybook Reading and Print Exposure in Childhood

Based on the literature mentioned thus far, it is indisputable that print exposure once children are reading themselves, is associated with several positive cognitive outcomes (e.g., Ecalle & Magnan, 2008; Echols et al., 1996; Sénéchal, 2000; Sparks et al., 2014; Stanovich & Cunningham, 1993). Furthermore, the importance of shared storybook reading is deemed pertinent to develop positive feelings towards reading and elucidates how these positive experiences can relate to future reading habits in young children (Baker et al., 1997; Weinberger, 1996). In fact, Baker, Mackler, Sonnenschein, and Serpell (2001) explored shared storybook reading experiences among 61 mother-child dyads when their children were in pre-kindergarten. Storybook interactions were coded. Later, the authors asked the mothers to rate the frequency with which their children engaged in home reading activities in relation to storybooks and chapter books in Grades 2 and 3. Baker and colleagues (2001) found that enjoyable shared reading experiences in pre-kindergarten were closely tied to children's reported subsequent reading activities in Grade 3. However, to date, very few researchers have specifically studied shared storybook reading and its relationship with print exposure in the elementary school years (c.f. Sénéchal, 2006).

A notable exception to this is Sénéchal's (2006) longitudinal study with regards to shared storybook reading and subsequent reading for pleasure. Here, Sénéchal (2006) examined how

French storybook exposure among French Canadian children in kindergarten was associated with their reading experiences in Grades 1 and 4. She carried out a study with 90 French-speaking children in kindergarten and Grade 1, 65 of whom were available to follow up with in Grade 4. Assessments of home literacy experiences were reported in kindergarten only; this involved parents answering questions regarding how often they read storybooks to their children and how many children's books they had in their home (Sénéchal, 2006). Multiple measures of children's academic skills were measured at the end of kindergarten, Grade 1, and Grade 4. Furthermore, children reported how often they read for pleasure during an average week in Grade 4. The findings revealed that children who were most exposed to French storybooks in kindergarten, reported reading for pleasure more often in Grade 4. Additionally, sharing storybooks with parents before school entry was associated with a greater interest in reading (Sénéchal, 2006). Indeed, those who read for pleasure will likely reap the benefits associated with print exposure. This phenomenon highlights the importance of parents reading storybooks to their children (Baker et al., 2001; Martin-Chang & Gould, 2012; Sénéchal, 2006; Sénéchal & LeFevre, 2002); however, are these findings maintained as children age?

Current Study

Print exposure has been studied extensively in English. Indeed, of the 99 studies covered in Mol and Bus' (2011) meta-analysis, 86 were conducted in English. One study has explored the relationship between shared storybook reading and print exposure in elementary school (Sénéchal, 2006). However, to my knowledge, the association between shared storybook reading and later print exposure in adolescence has never been explored. Given the benefits of print exposure and the fact that there is an achievement gap between individuals who love to read and

those who do not (Mol & Bus, 2011; Mol & Jolles, 2014), there is a need for research pertaining to shared storybook reading in childhood and print exposure in adolescence.

Based on the literature covered above, there is reason to believe that creating positive experiences around shared storybook reading relates to how children feel about books and future reading (Baker at al., 1997, Weinberger, 1996). In fact, these positive interactions before school entry have lasting effects into elementary (Sénéchal, 2006) and there is ample evidence showing that storybook reading improves vocabulary, among other skills (Flack et al., 2018; Mol & Bus, 2011; Nyhout & O'Neill, 2013). Thus, this study offers a ripe area of research as it intends to explore whether similar relationships exist with shared storybook reading and print exposure in English and French among adolescents.

My main objectives are to examine (a) whether shared storybook reading in English, as measured retrospectively by the TRT is correlated with print exposure in adolescence in English, as measured by the ART and Activity Preference Questionnaire, (b) whether shared storybook reading in French, as measured retrospectively by the TRT is correlated with print exposure in adolescence in French, as measured by the ART and Activity Preference Questionnaire, (c) whether retrospective shared storybook reading in English and concurrent print exposure in English are correlated with spelling, word-recognition, and word reading in English, and (d) whether retrospective shared storybook reading in French and concurrent print exposure in French are correlated with spelling and word-recognition in French. It is hypothesized that the more participants engaged in shared storybook reading as children, the more storybook titles they will retrospectively recognize, and the greater their print exposure will be as measured by the ART and the Activity Preference Questionnaire. Furthermore, participants with higher print

exposure scores, as measured by the TRT and ART, are hypothesized to have higher scores on literacy skills. These patterns of association are hypothesized within a language.

Method

Participants

In total, 45 adolescent-parent dyads from the greater Montréal area participated in this study. Participants were recruited via a snowball method, wherein the researcher identified key adolescent participants. Once parent permission was obtained, the participants were given the option to invite their friends to participate as well. The parent sample consisted of 36 mothers and 9 fathers (M_{age} = 47.59, *SD* = 4.79). On average, parents had completed 16 years of education (*SD* = 3.23, as calculated from Kindergarten). In terms of marital status, 71.1% of parents were married, 6.7% were common law, 13.3% were separated, 2.2% were divorced, 4.5% were widowed, and 2.2% were single. Parents were asked to indicate their dominant language, as well as any other languages they spoke. Among the sample, 39 parents (86.7%) noted English as their dominant language, 4 (8.9%) indicated that French was their dominant language and 2 (4.4%) noted Italian as their dominant language. As a second language, parents reporting speaking in French (80%), English (11.1%), German (2.2%), and Gujarati (2.2%); 4.4% of parents indicated that they were monolingual.

The adolescent sample consisted of 27 females and 18 males (M_{age} = 14 years, 6 months, *SD* = 1.35); the ages ranged from 12 years and 4 months to 17 years and 9 months. The participants were currently in or had completed grades ranging from 7-11 (Grade 7 *n* = 13; Grade 8 *n* = 12; Grade 9 *n* = 14; Grade 10 *n* = 1; Grade 11 *n* = 5). The majority of participants attended a bilingual elementary school (57.8%). The remaining participants attended elementary schools as follows: French immersion (17.8%), French school (20%), English school (2.2%), and private

school (2.2%). The greater part of the adolescent participants indicated that they liked to speak English (95%) the most and noted French (80%) as their next favorite language to speak. Similarly, 93.3% of participants reported speaking English most in the home and 6.7% reported speaking French the most at home. Sixty percent of participants did not speak any additional language at home, whereas the remaining 40% of participants claimed they spoke English (2.2%), French (24.4%), Spanish (2.2%), Italian (4.4%), Gujarati (2.2%), Polish (2.2%), and Chinese (2.2%) as a second language at home.

Adolescents rated their experiences learning to read in both languages on a 4-point Likert scale ranging from 1 (*very difficult*) to 4 (*very easy*). They also rated their current abilities reading in both languages on the same scale. On average, adolescents rated their experience learning to read in English as "easy" (M = 3.29, *SD* = .73) and in French as "difficult" (*M* = 2.33, *SD* = .67). They rated their current experiences reading in English as "very easy" (*M* = 3.76, *SD* = .48) and in French as "easy" (*M* = 2.78, *SD* = .79).

Participants also reported the frequency with which they remembered seeing someone reading at home during their childhood and how frequently they remembered being read to before school entry on a 5-point Likert scale ranging from 1 (*never*) to 4 (*very often*). On average, adolescents reported seeing a family member reading "often" (*M* = 3.09, *SD* = .87) and remember being read to "often" (*M* = 3.09, *SD* = .9). Additionally, participants were asked to recall the title of their favorite storybook from childhood and their current favorite author (provided they had one). Approximately 49% of adolescents named a favorite storybook title, while 51% of adolescents did not. Of those who named a favorite storybook, all but one participant named English storybooks. With regards to the current favorite author question, 40%

of participants named a current favorite author, whereas 60% of adolescents did not. Similarly, all but one of the participants reported reading the author's books in English.

Materials

Parent measures.

Parent questionnaire. Parents were asked to complete a demographics questionnaire consisting of questions pertaining to their relationship to the child (e.g., mother or father), date of birth, marital status, dominant language(s), other language(s), and years of education (see Appendix A).

Retrospective storybook reading questionnaire. Additionally, parents were asked to reflect on the frequency with which they read to their children before Kindergarten, in both English and in French on a 5-point Likert scale ranging from 0 (*never*) to 4 (*very often*; see Appendix A). They also completed a Title Recognition Test (TRT; see Appendix B), which is described below within the print exposure measures.

Adolescent measures.

Questionnaires.

Language questionnaire. Adolescent participants were asked to complete a language questionnaire pertaining to spoken languages, languages read, language of instruction, and reading habits. The questionnaire was adapted from Marian, Blumenfeld, and Kaushanskaya's (2007) Language Experience and Proficiency Questionnaire (LEAP-Q). In addition, eleven questions were added to this survey: four questions asked participants about reading that took place in the home, one question asked participants to name their favorite storybook from their childhood and two questions asked about their favorite author when they were younger and their current favorite author. Naming a favorite storybook or author was coded as 1, whereas failing to

name one or leaving the space blank was coded as a 0. Two separate questions asked participants to reflect on their experiences learning to read in both languages, and two asked about their current experiences reading in both languages. They were asked to rate their experiences on a 4-point Likert scale that ranged from 1 (*very difficult*) to 4 (*very easy*; see Appendix C).

Frequency and enjoyment questionnaire. A questionnaire was assembled to assess adolescents' self-reported experiences in school and in their free time during their childhood (elementary school years) and during adolescence (high school years thus far). The questionnaire asked participants how often they engaged in each type of reading activity on a 4-point Likert scale ranging from 1 (*never*) to 4 (*very often*). Based on their response to how often they engaged in each activity, participants were then asked how much they enjoyed doing so on a 4-point Likert scale ranging from 1 (*disliked a lot*) to 4 (*liked a lot*). However, if they indicated that they never engaged in an activity, they did not have to respond to how much they enjoyed it; this was coded as "0" for enjoyment. Four composite scores were created to obtain an overall score for frequency and enjoyment of reading in their free time in English during their childhood (Childhood Composite), free time in English during their adolescence (Adolescence Composite), and the equivalent in French. For example, the English childhood frequency and enjoyment composite was calculated by summing the frequencies multiplied by the enjoyment (E.g., [(frequency of listening to storybooks in free time * enjoyment) + (frequency of reading chapter books in free time * enjoyment) + (frequency of reading graphic novels in free time * enjoyment)]). The maximum possible score that could be obtained for each composite was 48 (see Appendix D).

Print exposure measures.

Activity preference questionnaire. An Activity Preference Questionnaire (Cunningham &

Stanovich, 1997) was administered to assess participants' self-reported leisure activities. Participants were given two options and asked to choose which activity they would prefer to do in their free time. Four of the ten questions asked participants to choose between reading and another option such as spending time on hobbies, watching television, listening to music, and playing an outdoor sport. One question asked students to choose between reading a book in English and reading a book in French to establish participants' language preference for reading and the remaining five questions that did not include reading served as fillers. A maximum score of four could be obtained on the Activity Preference Questionnaire. Participants received one point each time they selected reading over the alternative choice (see Appendix E).

Title Recognition Test. Storybook reading was measured by the Title Recognition Test (TRT), which assessed exposure to English and French storybooks by asking parents and adolescents to indicate the children's book titles they recognized among a list containing English and French foils (Sénéchal, 2000). The TRT was developed for an English population (Cunningham & Stanovich, 1990) and then adapted for a French Canadian population by Sénéchal (2000). It has been used for multiple purposes in past research (Cipielewski & Stanovich, 1992; Echols et al., 1996). Here, the TRT was adapted to incorporate 48 popular children's titles in English and in French published before 2007, this way all books would have been available for shared storybook reading by the time the youngest adolescents in Grade 7 were born and by the time the oldest adolescents in Grade 11 were approximately five years old. This was done in an attempt to limit children's personal reading of more recent storybooks in elementary school from factoring in. To update the TRT, teachers were interviewed to generate a valid list of popular English and French titles. In addition, eight French foils used in previous research were added (Ecalle & Magnan, 2008). The final list contained 24 real storybook titles in

English, 24 real storybook titles in French, eight English foils, and eight French foils. Participants were asked to put a checkmark next to book titles they recognized as being real. In addition, participants were asked to place an asterisk next to titles they recognized in the opposite language. In doing so, a more accurate picture of participants' exposure to books in each language could be captured, rather than simply assuming they engaged in shared storybook reading in a language they did not, merely because they could translate the title themselves.

To calculate TRT scores, a separate score was tallied for the English titles and for the French titles. French titles recognized in English (as indicated by an asterisk next to the title) were counted in the English TRT score, and vice versa. In each case, the proportion of foils was subtracted from the proportion of real storybook titles identified in the given language (e.g., [# of correctly identified titles/total number of titles] – [# of foils checked off/total number of foils]. More specifically, the TRT-E was calculated as the number of English titles recognized[1] divided by the total number of English titles; the number of English foils checked divided by the total number of English foils was subtracted from the first proportion (e.g., [# English titles identified/24] – [# English foils checked/8]). The TRT-F was calculated in the same manner (e.g., [# French titles identified/24] – [# French foils checked/8]; see Appendix F).

Author Recognition Test. To assess print exposure, participants completed the Author Recognition Test (ART), which acts as a proxy for reading over a lifetime, by asking participants which popular authors they recognize. For the purpose of this study, the original ART (Stanovich & West, 1989) was adapted to include more young adult, adult, and children's authors whose work is available to read in both English and French. Participants were asked to put a checkmark

[1] French titles marked with an asterisk, indicating they were recognized in English, were counted towards the English score.

next to the author names they recognized. Additionally, a column was added to the checklist to allow participants (who had read one or more book by the author) to indicate the language in which the work was read (e.g., English or French). This revised ART consisted of an alphabetical list of 110 real authors and 30 foils. Participants were asked not to guess, since the presence of foils can detect guessing.

To calculate a score for the Author Recognition Test – English (ART-E), a proportion was calculated wherein the total number of foils indicated as recognized and/or read was divided by the total number of foils. This proportion was subtracted from the total number of authors identified as having been read in English divided by the sum of real authors on the list (e.g., [# of authors identified as read in English/110] – [# of foils checked off/30]; see Appendix G). Similarly, to calculate the Author Recognition Test – French (ART-F) score, the total number of authors identified as having been read in French was divided by the total number of authors and the proportion of foils mistakenly identified were subtracted (e.g., [# of authors identified as read in French/110] – [# foils checked off/30].

Literacy skills.

English spelling measure. The spelling subtest of the Woodcock Johnson Test of Achievement –Third Edition (WJ-III; Woodcock, McGrew, & Mathers, 2001) was administered to assess adolescents' general spelling abilities in English. They were asked to spell 40 words dictated by the author, beginning with the word "bee" and ending with the word "bouillon". Each word was dictated first in isolation, second in a sentence, and then again in isolation. The words became progressively more difficult to spell. The WJ-III took approximately five minutes to administer. Scoring was discontinued after six consecutive errors, and age-equivalent scores were calculated as per standardized procedures. The WJ-III has good internal consistency (α

=.90; Woodcock et al., 2001).

French spelling measure. To create a spelling measure in French, I visited the Centre d'Apprentissage et de Promotion du Français at Concordia University. Together with an expert who held a doctorate degree in French literature, a list of 70 words was assembled. Two French high school teachers were then contacted to select words for each level of difficulty (easy=13 words, intermediate=14 words, difficult=13 words). This list was then cross checked with an orthographic list of French words used by teachers and created by the Gouvernement du Québec: Ministère de l'éducation (2001) to ensure that all of the easy words were taught before Grade 7. The resulting list became progressively more difficult to spell and included 40 words beginning with "livre" and ending with "scaphandrier". Similar to the WJ-III spelling measure in English, each word was dictated three times, twice in isolation, and once in a sentence. It took approximately five minutes to administer. Scores were calculated as a proportion by summing the number of correct spellings and dividing by the total number of words (e.g., [# words spelled correctly/40]).

English word-recognition. The English word-recognition measure consisted of a list of 25 English words and 18 foils (Rodrigues, Martin-Chang, & Kozak, in prep). Participants were asked to identify real English words among foils, in order to capture a measure of their vocabulary knowledge. This checklist took approximately two minutes to administer. Scores were calculated as proportions, wherein the number of English words checked were divided by the total number of English words and the total number of foils checked were divided by the total number of foils. The proportion of foils checked was subtracted from the proportion of English words identified. Scores were calculated as a proportion (e.g., [(# of correctly identified words/25) – (# of foils checked/18)]; see Appendix H).

French word-recognition. This measure contained 25 French words and 18 French foils. It was obtained directly from Sparks et al.'s (2012b) research. Parallel to the English word-recognition measure, participants were asked to identify real French words among foils to assess their vocabulary knowledge. This checklist took approximately two minutes to administer. Scores were calculated using the same procedure as the English word-recognition measure (e.g., [(# of correctly identified words/25) – (# of foils checked/18)]; see Appendix H).

Word reading measure. The word reading subtest of the Wide Range Achievement Test - Fourth Edition (WRAT-4; Wilkinson & Robertson, 2006) was administered to determine participants' word reading ability in English. The test consisted of reading 55 words in isolation. Testing was discontinued after ten consecutive errors. The WRAT-4 took approximately five minutes to administer and it has good internal consistency (α = .92; Wilkinson & Robertson, 2006).

Procedure

Parents completed the consent form (see Appendix I), Parent Questionnaire, Storybook Reading Questionnaire, and the TRT in English and in French. They were asked to complete these measures before the day of testing and without consulting their children or the Internet. Adolescent participants were tested in their own home or the home of a friend. The number of participants in each testing session varied from one to six adolescents. All data collection occurred in one session and on average, the entire session lasted approximately 1 hour. The session began with a verbal description of the assent form (see Appendix J). After obtaining written assent, the adolescents were given the choice to receive the questionnaire in English or French. However, all participants except one asked to complete the questionnaire in English. Regardless of language, the order of the tasks was held constant: Activity Preference

Questionnaire, Language Questionnaire, Frequency and Enjoyment Questionnaire, Word-Recognition Checklists in English and French, the WJ-III spelling in English, the French spelling assessment, the TRT, the ART, and the WRAT-4 word reading subtest.

Nine of the ten measures were completed in a group setting. The participants were seated out of view from one another's answers. Each task was explained verbally by the author. The tasks were self-timed. In instances where one child finished a task before others, they were given the option to complete a Sudoku puzzle, color a mandala, or draw a picture until all of the participants had finished that task. Once all participants had completed the first nine measures, the researcher asked each participant to complete the final task in another room, one at a time. The final task was the WRAT-4 word reading, which was administered according to standardized protocol. At the end of the session, parents were given monetary compensation of $5 and adolescents received $15 to thank them for participating in the study.

Design

The current study was correlational in nature. All of the measures were collected at one time. Some of the measures were used as retrospective proxies of shared storybook reading dating back to before kindergarten for the adolescent participants. These included the Storybook Reading Questionnaire, and the parental and adolescent TRTs. In addition, some of the Language Questionnaire and the first half of the Frequency of Reading and Enjoyment Questionnaire required participants to think back to their childhood experiences when they were in Grades 1 to 6. The remaining measures were used as proxies and/or assessments of their current activities and abilities up to and including the present day. These included aspects of the Language Questionnaire, the second half of the Frequency of Reading and Enjoyment Questionnaire, which

referred to their adolescent years in high school, the spelling tests, the word-recognition checklists, the ART, and the WRAT-4 word reading assessment.

Results

Parents' Storybook Reading

Data collection took place between the months of June and October 2018. The descriptive statistics for all variables of interest are shown in Table 1. In order to gauge the validity of the updated TRT, I first examined the parents' storybook reading frequency questionnaire and TRT scores in both languages. On average, parents reported remembering reading to their children "often" in English (M = 3.07, SD = 1.0). Parents' average score on the TRT-E was .29 (SD = .22). The data indicated they were following the instructions not to guess as they checked very few English foils (M = 0.13, SD = .45). As shown in Table 2, after controlling for parents' years of education, how much parents reported reading to their children in English was positively and significantly correlated with their own TRT-E. Therefore, as reported frequency of shared storybook reading increased, so too did the number of storybook titles that the parents accurately identified.

Table 1

Descriptive Statistics for Parent and Adolescent Measures

		Mean	*S.D.*	*Range*
Parent Measures	TRT-E	.29	.22	-.13[a] - .71
	TRT-F	.06	.06	0 - .29
	Freq. remember reading to child in English	3.07	1.01	0 - 4
	Freq. remember reading to child in French	1.27	1.27	0 - 4
Adolescent Measures (English)	Activity Preferences	1.02	1.30	0 - 4
	Childhood Composite	20.40	11.46	0 - 44
	Adolescence Composite	17.61	12.44	0 - 48
	TRT-E	.18	.18	-.33 - .54
	ART-E	.03	.07	-.12 - .23
	WJ-III Spelling	103.58	16.41	70 - 137
	Word-Recognition Proportion	.23	.17	-.09 - .72
	WRAT-4	105.10	14.85	75 - 145

		Mean	*S.D.*	*Range*
Adolescent Measures (French)	TRT-F	.06	.15	-.38 - .42
	ART-F	-.01	.04	-.13 - .05
	Childhood Composite	8.44	9.03	0 - 34
	Adolescence Composite	4.45	7.04	0 - 27
	Spelling	.56	.24	.07 - .92
	Word-recognition proportion	.47	.20	.13 - .90

Note. TRT-E = Title Recognition Test - English; TRT-F = Title Recognition Test – French, Activity Preferences = Activity Preference Questionnaire; ART-E = Author Recognition Test – English; ART-F = Author Recognition Test – French; WJ-III Spelling = Woodcock Johnson – Third Edition Spelling; WRAT-4 = Wide Range Achievement Test – Fourth Edition.
[a] = I also ran all of the analyses excluding negative TRT scores and ART scores, but the pattern of results remained the same, therefore we included all participants to increase power in the analyses.

Table 2

Partial Correlations Between Parent and Adolescent Measures in English

	1	2	3	4	5	6	7
1. Parents' English Reading	-						
2. Parents' TRT-E	.43**	-					
3. Activity Preferences	.02	-.02	-				
4. Childhood Composite	.19	-.03	.42**	-			
5. Adolescence Composite	.36*	.09	.51***	.70***	-		
6. Adolescents' TRT-E	.13	.30*	.44**	.40**	.35*	-	
7. Adolescents' ART-E	.25	.40**	.33*	.31*	.35*	.53***	-

Note. Parental education was controlled for in the analyses.
TRT-E = Title Recognition Test – English; Activity Preferences =Activity Preference Questionnaire; ART-E = Author Recognition Test – English.
*$p < .05$, **$p < .01$, ***$p < .001$, 2-tailed.

Contrary to reading in English, on average, parents reported that they read to their children in French "sometimes" (M = 1.27, SD = 1.27). This was also reflected in their TRT-F scores (see Table 1). Here, the mean TRT-F score was significantly lower than the TRT-E score $t(44) = -6.54$, $p < .001$. On average, parents checked 0.02 (SD = .15) French foils. The frequency with which parents remembered reading to their children in French was also significantly correlated with their scores on the TRT-F (see Table 3). Together, the pattern emerging from the retrospective English and French parental measures lend support to the titles chosen for the adapted TRT, as parents' self-report ratings were significantly correlated with their scores on their TRTs – measures that were created to avoid social desirability (Stanovich & West, 1989). In other words, parents who reported reading less often recognized fewer titles and parents who reported reading more often, recognized more titles. The associations between the two and the modest scores suggest that parents were reporting without consulting outside sources.

Table 3

Partial Correlations Between Parent and Adolescent Measures in French

	1	2	3	4	5	6	7
1. Parents' French Reading	-						
2. Parents' TRT-F	.44**	-					
3. Activity Preferences	-.04	.12	-				
4. Childhood Composite	.22	-.03	.23	-			
5. Adolescence Composite	.19	.10	.17	.36*	-		
6. Adolescents' TRT-F	.30*	.27	.30*	.18	.28	-	
7. Adolescents' ART-F	.17	.11	.19	.08	.04	.04	-

Note. Parental education was controlled for in the analyses.
TRT-F = Title Recognition Test – French; Activity Preferences =Activity Preference Questionnaire; ART-F = Author Recognition Test – French.
*$p < .05$, **$p < .01$, 2-tailed.

Parents and Adolescents' Storybook Reading

With regards to the adolescents' data, I then examined whether parents' TRT scores in English were associated with their children's TRT scores in English. Here, significant correlations were noted between parent's TRT-E scores and adolescents' TRT-E scores $r(41) = .30$, $p = .053$ (see Table 2). This indicates that even though the two measures were completed independently, as the number of storybook titles parents identified increased, so did the number of storybook titles their children identified. This correlation lends support to the retrospective aspect of the checklists, as there was a positive association between the number of titles parents identified, and the number of titles their children identified. A similar pattern was observed in the correlation between parent's and adolescents' TRT-F scores; however, it only approached significance $r(41) = .27$, $p = .080$ (see Table 3).

Adolescents' Preference for Reading

The two Reading Frequency and Enjoyment Questionnaires in English (Childhood and Adolescence Composites) lend further support to the adolescent print exposure measures. How often adolescents engaged in the three reading activities and how much they enjoyed doing so in childhood and adolescence was positively correlated with adolescents' preferences for reading in their free time as measured by the Activity Preference Questionnaire, the amount of storybook reading they engaged in as measured by the TRT-E, and how many authors they have read over their lifetime as measured by the ART-E (see Table 2). These significant positive correlations extend the literature by demonstrating that those who are reading more, are also enjoying it more. However, the results pertaining to French print exposure scores and the frequency and enjoyment composites were not significantly correlated (see Table 3). Perhaps because the majority of the sample population spoke English as a first language at home and not French.

In addition, adolescent participants were asked to name their favorite storybook title from childhood and their current favorite author (provided they had one). Independent samples *t*-tests were run with naming a favorite storybook title and the Activity Preference Questionnaire, TRT-E, and ART-E; however, there were no significant mean differences between those who could name a favorite storybook and those who could not on these three measures. However, the ability to name a favorite author yielded significant differences. Again, three independent-samples *t*-tests were run to determine if there were differences in Activity Preference Questionnaire scores, TRT-E scores, and ART-E scores between those who named a favorite author and those who did not (see Table 4). In each of the tests, the significance value in Levene's test for equality of variances was above $p > .05$, indicating that there was homogeneity of variances (Laerd Statistics, 2015).

Firstly, there was a significant difference in mean Activity Preference Questionnaire scores between those who named a favorite author and those who did not indicating that identifying a favorite author was linked to a greater preference for choosing reading over other activities. Secondly, adolescents who named a favorite author scored significantly higher on their TRT-E scores than adolescents who did not name an author. This finding asserts that having a favorite author is linked to recognizing more English storybook titles. Lastly, adolescents who named a favorite author scored significantly higher on the ART-E than adolescents who did not have a favorite author. In other words, having a current favorite author was associated with having read more authors in English. Overall, these findings lend further support to the checklists as there are significant differences between adolescents who self-reported a favorite author and their preference for reading, with checklist measures that limit social desirability.

Table 4

Descriptive Statistics and T-Test Results for Adolescents

Measure	Named Favorite Author		Did Not Name Favorite Author		95% CI for Mean Difference		
	M	*SD*	*M*	*SD*		*t*	df
Activity Preferences	1.46	.34	1.04	.20	.23, 1.73	2.63*	43
TRT-E	.28	.16	.12	.17	.05, .26	3.07**	43
ART-E	.07	.07	.01	.06	.03, .11	3.34**	43

Note. Named Favorite Author (n = 18); Did Not Name Favorite Author (n = 27).
*p < .05, **p < .01.

Adolescents' English Results

Shared Storybook Reading and Print Exposure. To answer my research questions pertaining to the English language data, I then ran correlations on all of the adolescent's measures displayed in Table 5, while controlling for parental education. My first research question evaluated whether storybook reading in English, as measured by the TRT-E was correlated with print exposure in adolescence, as measured by the Activity Preference Questionnaire and the ART-E. As shown in Table 5, all three measures were significantly correlated with one another. Therefore, when adolescents recalled more English storybook titles from their childhood they were also more likely to report wanting to read in their free time now and they were more likely to have indicated that they have read more authors in English. In addition, there was an association between how often adolescents chose "reading" over other options and how many authors they identified as having read on the ART-E.

Table 5

Partial Correlations Between English Variables of Interest

	1	2	3	4	5	6
1. Activity Preferences	-					
2. TRT-E	.48**	-				
3. ART-E	.34*	.56***	-			
4. WJ-III Spelling	.12	.36*	.46**	-		
5. Word-Recognition	.23	.35*	.57***	.69***	-	
6. WRAT-4	.07	.19	.44**	.70***	.69***	-

Note. Parental education was controlled for in the analyses.
Activity Preferences, Activity Preference Questionnaire; TRT-E = Title Recognition Test - English, ART-E = Author Recognition Test – English, WJ-III Spelling, Woodcock Johnson – Third Edition Spelling, WRAT-4 = Wide Range Achievement Test – Fourth Edition Word Reading.
*$p < .05$, **$p < .01$, ***$p < .001$, 2-tailed.

Given the significant correlations between adolescents' retrospective TRT-E scores and their ART-E scores, a series of hierarchical multiple regressions were conducted to examine the relationship between the two variables (see Table 6). The ART-E scores were examined as the outcome variable. In the first block, parental education was entered and accounted for 22% of unique variance. In the second block, adolescents' WRAT-4 word reading standardized scores accounted for 15% of unique variance. The WJ-III spelling scores were entered in the third block, but did not account for any significant unique variance. Next, the word-recognition scores were entered into the fourth block and accounted for 7% of unique variance in adolescents' ART-E scores. Even after accounting for 43% in adolescents' ART-E scores, the TRT-E scores still explained 12% of unique variance above and beyond the other predictor variables, suggesting that shared storybook reading plays a role in print exposure into adolescence. The full model of parental education, WRAT-4 word reading, WJ-III spelling, word-recognition, and TRT-E scores to predict ART-E scores was significant, $R^2 = .59$, $F(5, 36) = 10.69$, $p = .00$ adjusted $R^2 = .54$. The β coefficients and standardized betas are displayed in Table 6.

Print Exposure and Literacy Skills. It was also hypothesized that there would be a positive relationship between adolescents' print exposure, as measured by the TRT-E and ART-E, and their current scores on literacy skills, namely adolescents' spelling, word-recognition, and word reading. As shown in Table 5, adolescents' literacy skills scores were highly correlated with one other. Also, the adolescent's TRT-E scores were significantly correlated with their English spelling and word-recognition scores, but not with their word reading scores. Finally, as reported above, adolescents' TRT-E scores were significantly correlated with their ART-E scores; in turn their ART-E scores were moderately positively correlated with their spelling, word-recognition, and word reading scores.

Table 6

Hierarchical Multiple Regression Predicting Authors Read in English

	Authors Read in English									
	Model 1		Model 2		Model 3		Model 4		Model 5	
Variable	*B*	*ß*	*B*	*ß*	*B*	*ß*	*B*	*ß*	*B*	*ß*
Constant	-.14*		-.33***		-.36***		-.24*		-.21*	
1. Parental Education	.01**	.47	.01**	.47	.01***	.48	.01***	.47	.01**	.38
2. WRAT-4			.00**	.39	.00	.20	.00	.03	.00	.12
3. WJ-III Spelling					.00	.27	.00	.11	.00	-.01
4. Word-Recognition							.16*	.40	.12	.29
5. TRT-E									.15**	.38
R^2	.22		.37		.41		.48		.60	
F	11.54**		11.66***		8.56***		8.60***		10.69***	
ΔR^2	.22		.15		.04		.07		.12	
ΔF	11.54**		9.34**		2.40		5.02*		10.36**	

Note. WRAT-4 = Wide Range Achievement Test – Fourth Edition; WJ-III Spelling, Woodcock Johnson – Third Edition Spelling; TRT-E = Title Recognition Test – English.
*$p < .05$, **$p < .01$, ***$p < .001$.

Sets of hierarchical multiple regressions pertaining to English scores were conducted in order to investigate the third goal regarding the associations between print exposure, as measured by the TRT-E and ART-E scores, and the outcome variables, namely spelling, word-recognition, and word reading. In the first set of regressions the WJ-III spelling scores were examined as the outcome variable (see Table 7). In the first block, parental education did not account for any significant unique variance. However, in the second block, word-recognition and word reading accounted for 47% and 10% significant unique variance, respectively. After accounting for these scores, the TRT-E and the ART-E did not contribute any unique variance, $R^2 = .59$, $F(5, 36) = 10.53$, $p < .001$, adjusted $R^2 = .54$.

Another regression was run excluding word-recognition this time (see Table 8). The main reason for exclusion was because word-recognition showed slight multicollinearity with word reading (Laerd, 2015). Yet, word reading showed smaller correlations with the TRT-E and ART-E, indicating that word reading was measuring a slightly different construct compared to word-recognition. Parental education, word reading, the TRT-E, and the ART-E were entered across four blocks. In this regression, parental education remained insignificant, and word reading accounted for 49% of unique variance. The TRT-E explained 5% of unique variance and the ART-E did not contribute unique significant variance, $R^2 = .55$, $F(4, 37) = 11.34$, $p < .001$, adjusted $R^2 = .50$.

Table 7

Hierarchical Multiple Regression Predicting English Spelling with Literacy Skill Predictors

	English WJ-III Spelling									
	Model 1		Model 2		Model 3		Model 4		Model 5	
Variable	*B*	*ß*	*B*	*ß*	*B*	*ß*	*B*	*ß*	*B*	*ß*
Constant	106.43***		93.80***		48.15**		47.90*		47.51*	
1. Parental Education	-.15	-.03	-.22	-.04	-.20	-.04	-.38	-.07	-.37	-.07
2. Word-recognition			63.11***	.69	35.22**	.38	29.00*	.32	29.21	.32
3. WRAT-4					.49**	.44	.51**	.45	.51**	.45
4. TRT-E							14.50	.16	14.76	.17
5. ART-E									-1.77	-.01
R^2	.00		.47		.57		.59		.59	
F	.03		17.45***		16.89***		13.52***		10.53***	
ΔR^2	.00		.47		.10		.02		.00	
ΔF	.03		34.83***		8.80**		2.04		.00	

Note. WRAT-4 = Wide Range Achievement Test – Fourth Edition; TRT-E = Title Recognition Test – English; ART-E = Author Recognition Test – English.
*$p < .05$, **$p < .01$, ***$p < .001$.

Table 8

Hierarchical Multiple Regression Predicting English Spelling with Word Reading as a Predictor

	English WJ-III Spelling							
	Model 1		Model 2		Model 3		Model 4	
Variable	*B*	*ß*	*B*	*ß*	*B*	*ß*	*B*	*ß*
Constant	106.43***		24.06		29.83		35.69	
1. Parental Education	-.15	-.03	-.17	-.03	-.44	-.09	-.61	-.12
2. WRAT-4			.79***	.70	.74***	.66	.71***	.63
3. TRT-E					20.96*	.24	17.43	.20
4. ART-E							20.45	.10
R^2	.00		.49		.55		.55	
F	.03		19.14***		15.30***		11.34***	
ΔR^2	.00		.49		.05		.00	
ΔF	.03		38.20***		4.35*		.29	

Note. WRAT-4 = Wide Range Achievement Test – Fourth Edition; TRT-E = Title Recognition Test – English; ART-E = Author Recognition Test – English.
*$p < .05$, **$p < .01$, ***$p < .001$.

In order to determine which measure, the TRT-E or the ART-E, was a better predictor of each individual literacy skill (e.g., spelling), the other two literacy skills (e.g., word-recognition and word reading) were eliminated from further regressions. In the third regression with WJ-III spelling scores as the outcome variables, parental education was entered into the first block, the TRT-E was entered into the second block and the ART-E score was entered into the third block (see Table 9). Again, parental education did not contribute any unique variance. However, the adolescents' TRT-E scores accounted for 11% of unique variance in their spelling scores when entered first. Additionally, when entered last, adolescents' ART-E scores accounted for 13% of unique variance in their spelling scores. The full model was statistically significant, $R^2 = .24$, $F(3, 41) = 4.41$, $p = .01$, adjusted $R^2 = .19$. The β coefficients and standardized betas are displayed in Table 9.

Table 9

Hierarchical Multiple Regression Predicting English Spelling

	English WJ-III Spelling					
	Model 1		Model 2		Model 3	
Variable	*B*	*ß*	*B*	*ß*	*B*	*ß*
Constant	104.75***		105.09***		120.56***	
1. Parental Education	-.07	-.01	-.44	-.09	-1.38	-.27
2. TRT-E			30.37*	.34	9.11	.10
3. ART-E					113.23*	.49
R^2	.00		.11		.24	
F	.01		2.58		4.41**	
ΔR^2	.00		.11		.13	
ΔF	.01		5.15*		7.29*	

Note. TRT-E = Title Recognition Test – English; ART-E = Author Recognition Test – English. *$p < .05$, **$p < .01$, ***$p < .001$.

A parallel regression, entering the ART-E before the TRT-E was also run. When ART-E scores were entered in the second block after parental education, they accounted for 24% of significant unique variance in adolescents' spelling scores. However, the contribution of the TRT-E was no longer significant after accounting for the ART-E scores (see Table 10). The full model was statistically significant, $R^2 = .24$, $F(3, 41) = 4.41$, $p = .01$, adjusted $R^2 = .19$. The β coefficients, standard errors, and standardized betas are displayed in Table 10.

Table 10

Parallel Hierarchical Multiple Regression Predicting English Spelling

	English WJ-III Spelling					
	Model 1		Model 2		Model 3	
Variable	*B*	*ß*	*B*	*ß*	*B*	*ß*
Constant	104.75***		122.38***		120.56***	
1. Parental Education	-.07	-.01	-1.42	-.28	-1.38	-.27
2.ART-E			127.04**	.55	113.23*	.49
3.TRT-E					9.11	.10
R^2	.00		.24		.24	
F	.01		6.51**		4.41**	
ΔR^2	.00		.24		.01	
ΔF	.01		13.02**		.38	

Note. ART-E =Author Recognition Test – English; TRT-E = Title Recognition Test – English. *$p < .05$, **$p < .01$, ***$p < .001$.

In another set of regressions, word-recognition in English was the outcome variable (see Table 11). After accounting for parental education in the first block, adolescents' TRT-E scores accounted for 12% unique variance in their word-recognition scores. When entered into the last block, adolescents' ART-E scores accounted for 19% of significant unique variance in their word-recognition skills. The full model was statistically significant, $R^2 = .32$, $F(3, 41) = 6.30$, $p = .001$, adjusted $R^2 = .27$. The β coefficients and standardized betas are displayed in Table 11.

Table 11

Hierarchical Multiple Regression Predicting English Word-Recognition

	English Word-Recognition					
	Model 1		Model 2		Model 3	
Variable	*B*	*β*	*B*	*β*	*B*	*β*
Constant	.20		.21		.40**	
1. Parental Education	.00	.02	-.00	-.05	-.01	-.28
2. TRT-E			.34*	.36	.07	.07
3. ART-E					1.45**	.59
R^2	.00		.12		.32	
F	.02		2.91		6.30**	
ΔR^2	.00		.12		.19	
ΔF	.02		5.81*		11.61**	

Note. TRT-E = Title Recognition Test – English; ART-E = Author Recognition Test – English. *$p < .05$, **$p < .01$, ***$p < .001$.

Next, to run a parallel regression, the ART-E was entered before the TRT-E. The ART-E accounted for 31% of unique variance, while the TRT-E added no significant unique variance (see Table 12). The full model was statistically significant, $R^2 = .32$, $F(3, 41) = 6.30$, $p = .001$, adjusted $R^2 = .27$. The β coefficients and standardized betas are displayed in Table 12.

Table 12

Parallel Hierarchical Multiple Regression Predicting English Word-Recognition

	English Word-Recognition					
	Model 1		Model 2		Model 3	
Variable	*B*	*ß*	*B*	*ß*	*B*	*ß*
Constant	.20		.42**		.40**	
1. Parental Education	.00	.02	-.01	-.28	-.01	-.28
2. ART-E			1.56***	.64	1.45**	.59
3. TRT-E					.07	.07
R^2	.00		.31		.32	
F	.02		9.53***		6.30**	
ΔR^2	.00		.31		.00	
ΔF	.02		19.03***		.21	

Note. ART-E = Author Recognition Test – English; TRT-E = Title Recognition Test – English. *$p < .05$, **$p < .01$, ***$p < .001$.

In the last set of regressions, the WRAT-4 word reading score was the outcome variable (see Table 13). Parental education was entered in the first block and did not account for significant unique variance. The adolescents' TRT-E scores and their word reading scores were not correlated, so the TRT-E was omitted from the regression. ART-E scores were entered into the second block and accounted for 19% of unique variance in word reading. The full model was statistically significant, $R^2 = .19$, $F(2, 39) = 4.68$, $p = .01$, adjusted $R^2 = .15$. The β coefficients, standard errors, and standardized betas are displayed in Table 13. Therefore, based on all of the

hierarchical multiple regressions, my data show that the ART-E is a better predictor of spelling, word-recognition, and word reading, than the TRT-E.

Table 13

Hierarchical Multiple Regression Predicting English Word Reading

English WRAT-4 Word Reading				
	Model 1		Model 2	
Variable	*B*	*ß*	*B*	*ß*
Constant	104.69***		118.62***	
1. Parental Education	.025	.00	-1.05	-.23
2. ART-E			102.48**	.50
R^2	.00		.19	
F	.00		4.68*	
ΔR^2	.00		.19	
ΔF	.00		9.37**	

Note. ART-E = Author Recognition Test – English.
*$p < .05$, **$p < .01$, ***$p < .001$.

Adolescents' French Results

Shared Storybook Reading and Print Exposure. To answer my research questions pertaining to the French language data, I repeated all of the analyses above and I ran correlations on all of the adolescents' measures displayed in Table 14 in French, while controlling for parental education. My first research question was to determine whether storybook reading in French, as measured by the TRT-F was associated with both print exposure in adolescence, as

measured by the Activity Preference Questionnaire and the ART-F. However, within the Activity Preference Questionnaire, 93.3% of participants noted that they preferred to read in English and 6.7% preferred to read in French. Based on these data, the Activity Preference Questionnaire was removed from any further analyses. As shown in Table 14, adolescents' TRT-F scores were not significantly correlated with their ART-F scores.

Table 14

Partial Correlations Between French Variables of Interest

	1	2	3	4
1. TRT-F	-			
2. ART-F	.03	-		
3. Spelling	.25	.28	-	
4. Word-Recognition	.32*	.18	.83***	-

Note. Parental education was controlled for in the analyses.
TRT-F = Title Recognition Test - French, ART-F = Author Recognition Test – French.
*$p < .05$, **$p < .01$, ***$p < .001$, 2-tailed.

Print Exposure and Literacy Skills. To answer my second research question regarding the associations between print exposure and literacy skills in French, partial correlations controlling for parental education were run between adolescents' TRT-F scores, ART-F scores, spelling scores, and word-recognition scores (see Table 14). Unlike the English associations, adolescents' retrospective TRT-F scores were only significantly correlated with their word-recognition skills in French $r(42) = .32$, $p = .033$ and ART-F scores approached significance with French spelling scores when correlations were run $r(42) = .28$, $p = .067$.

With regards to French outcome variables, because adolescents' TRT-F and ART-F scores were not correlated with French spelling no regression with French spelling as the outcome was run. However, due to the significant correlation between the TRT-F and French word-recognition, a hierarchical multiple regression was conducted in order to further investigate my research question pertaining to the associations between identifying French storybook titles and word-recognition in French. In this regression, word-recognition in French was the outcome variable (see Table 15). Parental education was entered into the first block and did not account for any significant variance. The addition of adolescents' TRT-F scores was entered next and contributed 10% significant unique variance towards adolescents' word-recognition skills, however, the full model was not statistically significant, $R^2 = .11$, $F(2, 42) = 2.48$, $p = .10$, adjusted $R^2 = .06$. The β coefficients and standardized betas are displayed in Table 15.

Table 15

Hierarchical Multiple Regression Predicting French Word-Recognition

	French Word Recognition			
	Model 1		Model 2	
Variable	*B*	*ß*	*B*	*ß*
Constant	.52**		.55**	
1. Parental Education	-.00	-.05	-.01	-.10
2. TRT-F			.43*	.32
R^2	.00		.11	
F	.12		2.48	
ΔR^2	.00		.10	
ΔF	.12		4.84*	

Note. TRT-F = Title Recognition Test – French.
*$p < .05$, **$p < .01$, ***$p < .001$.

Discussion

Up to this point, researchers have stressed the importance of early shared storybook reading with regards to children's vocabulary and feelings about reading (e.g., Baker et al., 1997; Flack et al., 2018; Mol & Bus, 2011); however, only one study has explored the relationship between shared storybook reading and reading for pleasure during the elementary school years (Sénéchal, 2006). Furthermore, to my knowledge, no studies have examined these relationships into adolescence or beyond. Thus, the overarching goal of my study was to investigate whether early shared storybook reading was associated with print exposure in adolescence. I also aimed to replicate findings concerning print exposure and concurrent literacy skills, in a sample of adolescents learning both English and French.

Baker and colleagues (1997) contend that early pleasurable shared storybook experiences are at the root of children's feelings about reading and their eventual desire to read. It seems that these early enjoyable experiences not only contribute to reading ability as noted by Weinberger (1996), but also to children's involvement with reading for pleasure as they age (Baker et al., 2001; Sénéchal, 2006). It stands to reason that shared storybook experiences in childhood may be associated with a love of reading later on. However, it has only been explored in two studies, one in English (Baker et al., 2001) and one in French (Sénéchal, 2006) and only up to Grade 4. Baker et al. (2001) determined that a positive atmosphere surrounding shared storybook reading in pre-kindergarten children was linked to children's reading activities in Grade 3. These associations in the literature were also observed in French by Sénéchal (2006). She found that children who had more exposure to French storybooks in kindergarten were also more likely to read for pleasure in Grade 4.

Consistent with my hypothesis that storybook reading in English would be positively associated with print exposure, my data showed that when adolescents recognized more English storybook titles, they identified reading more authors in English. I also investigated the association between adolescents' shared storybook reading in English and their preference for reading (as measured by the Activity Preference Questionnaire). Here, the more English storybook titles adolescents recognized, the more apt they were to choose reading among other activities. In addition, adolescents who indicated that they read more English authors were more likely to choose reading over other activities in their free time. A similar finding was observed in Martin-Chang and Gould's (2008) study wherein personally reading authors was associated with a preference for reading, whereas merely identifying author names was not.

Thus, my English findings among adolescents are in accordance with previous research conducted with younger children (Sénéchal, 2006). Electing to read for pleasure is a personal choice that may be related to multiple factors; however, based on my results, I argue that shared storybook reading is one of them. In my study, I was able to investigate this notion with regards to adolescents' shared storybook reading retrospectively and their current print exposure. Even after accounting for parental education, word reading, spelling, and word-recognition, shared storybook reading in English was associated with approximately 12% of the unique variance in how many authors adolescents reported reading in English, which is known as primary print knowledge (Martin-Chang & Gould, 2008). These findings offer unique and compelling support for shared storybook reading. My results suggest that not only is shared storybook reading an informal literacy activity that promotes language development (Nyhout & O'Neill, 2013; Sénéchal, 2006), but it can also pave the way to a proclivity towards reading for pleasure in adolescence, and thereby contribute to countless positive cognitive outcomes as established in

the extensive literature on print exposure (Cunningham & Stanovich, 1991, 1997, 2001; Stanovich, 1986; Stanovich & Cunningham, 1992; Martin-Chang & Gould, 2008; Mol & Bus, 2011; Sparks et al., 2012b; Sparks et al., 2014).

My findings can be illuminated through the lens of Vygotsky's sociocultural theory, wherein children learn through instruction and imitation, involving questioning and answering in social interactions with more knowledgeable individuals (Jaramillo, 1996; John-Steiner & Mahn, 1996; Vygotsky, 1978). When parents and children engage in shared storybook reading, the goal is not to teach reading, but to engage in a meaningful context (Arya et al., 2014; Button & Johnson, 1997). Children may become engrossed in storybooks by answering and asking questions and in turn, they may desire to imitate the act of reading. Vygotsky's Sociocultural Theory also asserts that children develop behaviors and learn social norms through their interactions with more competent individuals (Jaramillo, 1996; John-Steiner & Mahn, 1996; Vygotsky, 1978). Parents are essentially scaffolding book reading during these social interactions as they model concepts about print (e.g., how to hold a book, where to start reading, etc.; Sénéchal & LeFevre, 2002) and higher-order thinking through questioning (John-Steiner & Mahn, 1996).

I also found support for my research question regarding the association between print exposure and concurrent literacy skills. My findings align with my predictions in English and previous research (e.g., Mol & Bus, 2011; Sparks et al., 2014). Based on the literature, I expected there to be a relationship between adolescents' print exposure and their spelling and word-recognition in English and in French, as well as their word reading scores in English. Adolescents who identified reading more authors in English were also more likely to perform better on the spelling, word-recognition, and word reading measures. Likewise, those who

identified that they read fewer authors in English performed less well on these measures, thus my findings add to the robust literature. For instance, when Stanovich and West developed the ART, they found it predicted variance in spelling and comprehension abilities. Similarly, Stanovich and Cunningham (1992) noted a link between print exposure, spelling, vocabulary, fluency, and cultural knowledge outcomes. More recently, Sikora et al. (2018) found adults who grew up with larger home libraries had higher literacy, numeracy, and technological skills in adulthood.

By carrying out regressions in my study, I was also able to examine which measure, the TRT-E or the ART-E, was a better predictor of these literacy outcomes. The ART-E contributed unique variance to each outcome regardless of whether it was entered before or after the TRT-E. However, the TRT-E was no longer significant when entered after the ART-E. Therefore, it seems as though the TRT-E may be mediated through the ART-E. The ART-E, or current print exposure, was a better predictor of spelling, word-recognition, and word reading, than the TRT-E, the retrospective measure of shared storybook reading. This suggests that adolescents' reading volume over the lifetime explains their current literacy skills better than their shared storybook reading experiences, which took place during a shorter period of time and was measured retrospectively.

Another interesting finding stems from two self-report questions wherein adolescents were asked to write the name of their favorite storybook from childhood and their favorite author currently. Weinberger's (1996) research established the importance of children having a favorite storybook at age three. Unlike Weinberger's (1996) study with preschool aged and elementary-aged children, I did not find any differences between adolescents who named a favorite storybook from childhood and those who did not. This may have resulted from the retrospective nature of the study, in that children in Weinberger's (1996) study were asked to name their

favorite storybook at present, whereas adolescents in mine were asked to recall their favorite storybook from childhood. Nevertheless, adolescents who named a current favorite author were more likely to choose reading over other activities in their spare time, recognize more English storybook titles, and indicate that they read more authors in English. The social interactions of early shared storybook reading may instill a love of reading in children insomuch as they identify as a reader and remember the name of a favorite author. In my study, it appears that having a favorite author is linked to print exposure and print exposure is related to spelling, word-recognition, and word reading.

Limitations

One limitation of my study is that selective sampling methods were utilized to locate participants. Although it was not my intention, this evidently resulted in a population sample that vastly consisted of English first language adolescents. Even though the majority of adolescents attended bilingual, French immersion, or French elementary schools, the data were derived from a population where 93.3% of the adolescents indicated speaking English in the home the most (6.7% noted French as the primary home language) and 60% of adolescents claimed they did not speak a second language at home (24.4% noted French as a second language spoken at home). The homogeneity of my primarily English sample limited my ability to generalize to the French population and as a result, my study did not replicate findings in French among adolescents. Additionally, it is possible the titles in the TRT-F were not representative of well-known books for the intended age group. However, on the grounds that there was a correlation between parents' TRT-F scores and how much parents self-reported reading to their children in French, which was on average "sometimes", it is difficult to determine whether the insignificant findings pertaining to adolescents' TRT-F scores stem from the possibility of an invalid French measure

or the fact that reading in French did not occur as often in the home. The next step would be to validate the French TRT in a Francophone population.

In addition, the associations between print exposure and spelling and word-recognition were not observed in French, with the exception of the correlation between the TRT-F and word-recognition. To my knowledge, few studies have explored the role of shared storybook reading in French and current literacy skills. Sénéchal (2000), who was the first to adapt the TRT for a French Canadian population, found a significant correlation between children's performance on the TRT and their vocabulary scores, which supports my link between the TRT-F and word-recognition. Similarly, Ecalle and Magnan (2008) found children's concurrent print exposure in Grades 4 and 5 accounted for unique variance in their spelling, vocabulary, and word-recognition skills. However, the lack of associations pertaining to my results is likely due to the population sample I had access to.

Another limitation applies to socioeconomic status (SES). In order to keep the parental questionnaire short, I elected to ask parents to indicate the number of years of education they had completed rather than their SES. However, the associations between SES, storybook reading, and print exposure are mixed. Manolitsis and colleagues (2013) studied the home literacy environment and found that SES had no effect on formal and informal literacy activities. They noted that learning at home was provided by all parents regardless of their SES. Similarly, it has been noted that the kinds of literacy activities parents use with their children generalize across SES (Hood et al., 2008). Yet, Mol and Bus (2011) recognized a limitation among the studies in their meta-analysis involving young children. There was a lack of research conducted in low SES families and Mol and Bus (2011) expressed that this could be because researchers expect few literacy activities among these families and consequently floor effects on checklists, such as the

TRT. With regards to adolescents, De Naeghel and colleagues (2014) noted that higher SES was associated with a greater desire to read. Taken together, future research should collect data on SES in order to adequately examine its effects on the relationship between shared storybook reading in childhood and print exposure in adolescence.

Finally, two other limitations to consider are the correlational nature of the study, which does not reveal the direction of the relationships, and the retrospective aspects of my study. At least one other large scale study has used a retrospective design, wherein the number of books in adolescence, which was estimated retrospectively, was associated with adult's literacy, numeracy, and technology skills (Sikora et al., 2018). Here, adolescents read through a list of real storybook titles and foils and were asked to identify storybook titles from their childhood. Although there was a positive correlation between the number of storybook titles adolescents identified and the number of authors read in English, it could be that the retrospective TRT was mediated by a third order variable. Perhaps adolescents who place importance on reading and who care about reading now are also the adolescents who value their memories of shared storybook reading and are therefore able to identify more storybook titles (e.g., perhaps they still own their storybooks as keepsakes). However, the fact that the parents' TRT-E scores, which were completed independently from their children, were significantly correlated with their children's, acts as corroborating evidence that the findings are measuring shared storybook reading retrospectively. Nevertheless, future research should be carried out longitudinally in order to truly capture the role shared storybook reading has on print exposure.

Conclusion

This is one of the first studies to ever look at shared storybook reading in childhood and print exposure in adolescence, most likely due to the time commitment required. The innovative

design of my study is not without limitations, but it does allow for the ability to report preliminary research in English. More specifically, my study offers two new contributions to research. It is the first to demonstrate a relationship between shared storybook reading in childhood and an inclination towards reading in adolescence. Granted, shared storybook reading was measured retrospectively, these preliminary findings may act as a catalyst for future large scale studies that have the resources to follow children for a substantial period of time. I also worked with adolescents and assessed their print exposure based on authors read (primary print knowledge), rather than simply based on authors recognized (secondary print knowledge, or memory). In the present study, all ART scores were based on primary print knowledge and were associated with reading frequency and enjoyment. The positive correlations between adolescents' print exposure scores based on the ART-E, their scores on the Activity Preference Questionnaire, and the Frequency and Enjoyment questionnaire suggest that print exposure is a proxy of reading over the lifetime, as well as a measure of reading for pleasure.

Implications

Based on my findings, I would advocate that parents read to their children because shared storybook reading is associated with many benefits. Parents might find comfort in the fact that shared storybook reading helps develop children's vocabulary (Flack et al., 2018; Nyhout & O'Neill, 2013; Sénéchal, 2006) and relates to children's future reading levels (Weinberger, 1996). In addition, parents may be pleased to know that shared storybook reading is related to children's favorable experiences with books in elementary school (Baker et al., 2001; Sénéchal, 2006). All things considered, electing to read for pleasure remains a personal decision and the results of my study provide meaningful implications for parents and children. My findings demonstrate that shared storybook reading contributes to children's subsequent print exposure

and reading preferences into adolescence. Parents should be encouraged to luxuriate in shared storybook reading as it may instill a long-lasting love of reading into adolescence and beyond. Thus, a more skilled and literate society may hinge on the early social interactions of shared storybook reading between parent and child.

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Appendix A

Parent and Storybook Reading Questionnaire

Questions for the Parent/Guardian

1) **What is your relationship to the child?**

2) **What is your date of birth?** Day/Month/Year _ _ / _ _ / _ _ _ _

3) **What is your marital status?** _____

4) **What is your dominant language(s)?**

5) **What other language(s) do you speak?**

6) **How many years of education have you completed?**
   (e.g., Kindergarten – Grade 6 = 7 years, Grade 7 – Grade 11 = 5 years, cegep, university, vocational trade, etc).

   Number of years: _____

7) **Please highlight/indicate which of the following responses best describes your experiences reading to your child in ENGLISH before he/she entered Kindergarten.**

   a) Never (Never read to your child in English)
   b) Rarely (Read to your child less than once a week in English)
   c) Sometimes (Read to your child approximately 3 times a week in English)
   d) Often (Read to your child almost every day in English)
   e) Very Often (Read to your child every day, sometimes more than once a day in English)

8) **Please highlight/indicate which of the following responses best describes your experiences reading to your child in FRENCH before he/she entered Kindergarten.**

   a) Never (Never read to your child in French)
   b) Rarely (Read to your child less than once a week in French)
   c) Sometimes (Read to your child approximately 3 times a week in French)
   d) Often (Read to your child almost every day in French)
   e) Very Often (Read to your child every day, sometimes more than once a day in French)

Please complete the checklist on the following pages.

Appendix B

Parent Title Recognition Test

Title Checklist

Below you will find a list of titles. 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 being real titles in the given language. If you recognize the storybook in a different language, please indicate this with a star. **Please do not guess** as some of the titles are not real, so guessing can be easily detected. **Please do not consult outside sources or ask/show your child.**

Example:

Author names	**Recognize**	**Meaning**
Le Petit Prince		No 'X' indicates you do not recognize the title.
Le Petit Prince	X	An 'X' in the "recognize" column indicates that you recognize the title of the book in French (since the title is in French).
Le Petit Prince	*	A '*' in the recognize column indicates that you recognize the title of the book in the opposite language than it is presented here, (E.g., I know Le Petit Prince is The Little Prince in English. This is a real book title that I recognize in English, not in French).

Please start:

Children's Titles	**R**		**Children's Titles**	**R**
Aaaaaah! Une araignée			Lazy Cat, Lazy Cat	
Are You My Mother?			L'équipe des Douze	
Barbapapa			Le Bouc de Monsieur Requin	
Bartholomew and the Oobleck			Le Chandail de Hockey	
Because I Love You			Le Grand Jonathan	
Biscuit			Le Félin Chassé	
Blame it on Billy			Le Pré sans Fleurs ni Couleurs	
Brown Bear, Brown Bear, What Do You See?			Le Roi de Mofou	
Caps for Sale			Le Zloukch	
Chicka Chicka Boom Boom			Léon le Caméléon	
Clean up, Carter!			Mais que Font les Fées avec Toutes ces Dents ?	
Click, Clack, Moo: Cows That Type			Mario le Pingouin	
Corduroy			Martine à la Ferme	
Danny and the Dinosaur			Mimi, Paul et Chabichou se Présentent	
Dog Heaven			Mireille L'Abeille	
Down by David's Pond			Monsieur Costaud	
Father Bear Comes Home			My Friend the Mailman	
Flat Stanley			Oh, the Places You'll Go!	
Frisson l'écureuil			Petit Loup Brun	
Gerald McBoing Boing			Petunia, Princesse des Pets	
Géraldine et sa Tempête de Neige			Picorine la Poule	
Goodnight Moon			Simon et les Flocons de Neige	
Grandma and the Pirates			Stella, Reine des Neiges	
Guess How Much I Love You			The Going to Bed Book	
Harold and the Purple Crayon			The Muffin Maker	
Histoire de Babar, le petit éléphant			The Runaway Bunny	
If You Give a Pig a Pancake			The Story of Ferdinand	
Jean-Lou et Sophie Découvrent la Mer			Trois Bandits	
Jiji et Pichou			Une Mauvaise Journée pour Benjamin	
La Famille de Bertrand			Wacky Wendell	
La Moustache Bleue			What Rhymes with Orange?	
La Soupe au Sous			Where the Wild Things Are	

Thank you so much for your participation!

Appendix C

Language Questionnaire

Language Questionnaire

1)What is your date of birth? Day/Month/Year _ _ / _ _ / _ _ _ _

2)How old are you? _____

3)What grade are you in? _____

4)Please circle your sex: F M Other

5)Which language(s) do you like to speak most: _____

If you speak other languages, rank them in the order you like to speak most:

1._____ _____ _____ _____

6)What language(s) are spoken most in your home(s)? _____

If there are other languages, please write them here: _____

7)How many children are there in your family? _____

8)Are you the oldest? Youngest? Please describe: _____

9)Please put an 'X' next to the type of elementary school you went to:

Type of Elementary School	**Description**	**X**
Bilingual	50% English 50% French in Kindergarten, Grades 1, 2, & 3.	
French Immersion	More than 50% French in Kindergarten, Grades 1, 2, & 3.	
French	Most instruction in French in Kindergarten, Grades 1, 2, & 3, except 1-2 classes a week.	
English	Most instruction in English in Kindergarten, Grades 1, 2, & 3.	
Private	Please describe:	

10) As a child, do you remember seeing someone in your family reading at home? Circle your response.

NEVER SOMETIMES OFTEN VERY OFTEN

11) Do you remember being read to as a child? Circle your response.

NEVER SOMETIMES OFTEN VERY OFTEN

12) If you do remember being read to as a child, who read to you and in what language(s)?

Adult (e.g., Mother(s), Father(s), Grandparent(s), etc.)	**Language(s)**

13) Do you want to share any memories you have about being read to as a child?

_____
_____
_____
_____

14) Do you have a favorite storybook from your childhood? If so, please write the title of the book here: _____

15) Did you have a favorite author in elementary school? _____

If so, please write his/her name here: _____

What language(s) did you read his/her books in? _____

16) Do you have a favorite author now? _____

If so, please write his/her name here: _____

What language(s) did you read his/her books in? _____

17) Please mark an 'X' in the box that describes your experiences:

	Very Difficult	**Somewhat Difficult**	**Easy**	**Very Easy**
Learning to read in French				
Learning to read in English				
Reading in French now				
Reading in English now				

Appendix D

Childhood and Adolescence Frequency and Enjoyment Questionnaire

IN ELEMENTARY SCHOOL, how much did you:

	Never	Some times	Often	Very Often		Disliked a lot	Disliked	Liked	Liked a lot
Watch Youtube videos in French.					Like it				
Listen to French storybooks in school.					Like it				
Listen to French storybooks in your free time.					Like it				
Read French chapter books in school.					Like it				
Read French chapter books in your free time.					Like it				
Read French graphic novels in school.					Like it				
Read French graphic novels in your free time.					Like it				
Watch Youtube videos in English.					Like it				
Listen to English storybooks in school.					Like it				
Listen to English storybooks in your free time.					Like it				
Read English chapter books in school.					Like it				
Read English chapter books in your free time.					Like it				
Read English graphic novels in school.					Like it				
Read English graphic novels in your free time.					Like it				

NOW, IN HIGH SCHOOL, how much do you:

	Never	Some times	Often	Very Often		Dislike a lot	Dislike	Like	Like a lot
Watch Youtube videos in French.					Like it				
Read French novels in school.					Like it				
Read French novels in your free time.					Like it				
Read French graphic novels in school.					Like it				
Read French graphic novels in your free time.					Like it				
Read French non-fiction in school.					Like it				
Read French non-fiction in your free time.					Like it				
Watch Youtube videos in English.					Like it				
Read English novels in school.					Like it				
Read English novels in your free time.					Like it				
Read English graphic novels in school.					Like it				
Read English graphic novels in your free time.					Like it				
Read English non-fiction in school.					Like it				
Read English non-fiction in your free time.					Like it				

Appendix E

Activity Preference Questionnaire

Would you rather …

Imagine you got a day to yourself, where you could choose between two activities! Please mark an 'X' next to the activity you would choose. If you like or dislike both equally, please choose the one you would prefer to do. **Which activity would you prefer to do in your free time?**

Would you rather…

Ex.	**Listen to music of my choice** OR	
	Watch a movie/TV show of my choice	**X**
1	Read a book of my choice OR	
	Watch a movie/TV show of my choice	
2	Spend time on my hobbies OR	
	Listen to music of my choice	
3	Play an outdoor sport of my choice OR	
	Read a book of my choice	
4	Talk with friends of my choice OR	
	Watch a movie/TV show of my choice	
5	Read a book of my choice OR	
	Listen to music of my choice	
6	Spend time on my hobbies OR	
	Watch a movie/TV show of my choice	
7	Watch a movie/TV show of my choice OR	
	Play an outdoor sport of my choice	
8	Spend time on my hobbies OR	
	Read a book of my choice	
9	Play an outdoor sport of my choice OR	
	Spend time on my hobbies	
10	Read a book of my choice in English OR	
	Read a book of my choice in French	

Appendix F

Title Recognition Test

Title Recognition Test (TRT)

Below you will find a list of titles. 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** as some of the titles are not real, so guessing can be easily detected.

Please start:

Children's Titles	**R**		**Children's Titles**	**R**
Aaaaaah! Une araignée			Lazy Cat, Lazy Cat	
Are You My Mother?			L'équipe des Douze	
Barbapapa			Le Bouc de Monsieur Requin	
Bartholomew and the Oobleck			Le Chandail de Hockey	
Because I Love You			Le Grand Jonathan	
Biscuit			Le Félin Chassé	
Blame it on Billy			Le Pré sans Fleurs ni Couleurs	
Brown Bear, Brown Bear, What Do You See?			Le Roi de Mofou	
Caps for Sale			Le Zloukch	
Chicka Chicka Boom Boom			Léon le Caméléon	
Clean up, Carter!			Mais que Font les Fées avec Toutes ces Dents ?	
Click, Clack, Moo: Cows That Type			Mario le Pingouin	
Corduroy			Martine à la Ferme	
Danny and the Dinosaur			Mimi, Paul et Chabichou se Présentent	
Dog Heaven			Mireille L'Abeille	
Down by David's Pond			Monsieur Costaud	
Father Bear Comes Home			My Friend the Mailman	
Flat Stanley			Oh, the Places You'll Go!	
Frisson l'écureuil			Petit Loup Brun	
Gerald McBoing Boing			Petunia, Princesse des Pets	
Géraldine et sa Tempête de Neige			Picorine la Poule	
Goodnight Moon			Simon et les Flocons de Neige	
Grandma and the Pirates			Stella, Reine des Neiges	
Guess How Much I Love You			The Going to Bed Book	
Harold and the Purple Crayon			The Muffin Maker	
Histoire de Babar, le petit éléphant			The Runaway Bunny	
If You Give a Pig a Pancake			The Story of Ferdinand	
Jean-Lou et Sophie Découvrent la Mer			Trois Bandits	
Jiji et Pichou			Une Mauvaise Journée pour Benjamin	
La Famille de Bertrand			Wacky Wendell	
La Moustache Bleue			What Rhymes with Orange?	
La Soupe au Sous			Where the Wild Things Are	

Appendix G

Author Recognition Test

Author Recognition Test (ART)

Below you will find a list of author names. Some of these names are of real authors, and some are not. Please put an **'X'** beside the names that you recognize as being **real authors**. Please do not guess. Remember, some of the names are not real, so guessing can be easily detected. If you have read one or more books by an author, in the language read column indicate the language in which you read the book(s) by that author (English, French, Spanish, Mandarin, Arabic, etc.).

1)Please start by going through each name on the list and marking an 'X' next to the author names you recognize.

2) After you have gone through the entire list of names, go back to the author names where you marked an 'X' and think about if you read one or more books by that author. If you did not read any of their books but you just recognize the author, move on to the next one. If you have read one or more books by that author. Indicate which language(s) you read his/her book(s) in.

Example:

Author names	Recognize	Language Read	Meaning
Dr. Seuss			No 'X' indicates you do not recognize the author.
Dr. Seuss	X		An 'X' in the "recognize" column indicates that you recognize the name as being an author.
Dr. Seuss	X	E	An E in the "language read" column indicates that you have read one or more books by that author in English.
Dr. Seuss	X	F	An F in the "language read" column indicates that you have read one or more books by that author in French.
Dr. Seuss	X	E and F	An E and an F in the "language read" column indicates that you have read one or more books by that author in both English and French.

Author Names	R	Lang(s) Read
V.C. Andrews		
Ginette Anfousse		
Katherine Applegate		
Jay Asher		
Isaac Asimov		
Margaret Atwood		
David Baldacci		
Russell Banks		
Christopher Barr		
Leigh Bardugo		
Lauren Benjamin		
Robin Benway		
Thomas Bever		
Elliot Blass		
Judy Blume		
John Boyne		
Ann Brashares		
Phillippe Brisebois		
Dan Brown		
Jennifer Butterworth		
Meg Cabot		
Katherine Carpenter		
Agatha Christie		
Tom Clancy		
Cassandra Clare		
Suzanne Clarkson		
Eoin Colfer		
Jackie Collins		
Suzanne Collins		
Edward Cornell		
Patricia Cornwell		
Sharon Creech		
Roald Dahl		
James Dashner		
Hélène Desputeaux		
Kate Di Camillo		
W. Patrick Dickson		
Alexandre Dumas		
Robert Emery		
John Flanagan		
Gayle Forman		
Cornelia Funke		
Diana Gabaldon		

Author Names	R	Lang(s) Read
Jilly Gagnon		
Marc Geofferion		
Elizabeth George		
Sue Grafton		
Élise Gravel		
François Gravel		
Claudia Gray		
John Green		
Sheryl Green		
John Grisham		
Shannon Hale		
Laurie Halse Anderson		
Laurell K. Hamilton		
Frank Herbert		
Mary Higgins Clark		
Anthony Horowitz		
Erin Hunter		
John Jakes		
E.L. James		
Robert Jordan		
Frank Kiel		
Stephen King		
Jeff Kinney		
Sophie Kinsella		
Dean Koontz		
Gordon Korman		
Mélanie Lachance		
Jean Lajoie		
Chloe Lamoureux		
Luc Larouche		
Margaret Laurence		
Louise Leblanc		
Ursula LeGuin		
Alain Levesque		
Marc Levy		
Priscilla Levy		
C.S. Lewis		
Pittacus Lore		
Lois Lowry		
Marie Lu		
Alex Lumsden		
Sarah J. Maas		
Ann M. Martin		

Author Names	R	Lang(s) Read
George R.R. Martin		
Ann Marie MacDonald		
Morton Mendelson		
Marissa Meyer		
Stephenie Meyer		
Christopher Moore		
Michael Moore		
L.M. Montgomery		
James Morgan		
Alice Munro		
Guillaume Musso		
Lauren Oliver		
Kenneth Oppel		
Danielle Page		
RJ Palacio		
Christopher Paolini		
Katherine Paterson		
James Patterson		
Gary Paulsen		
David Perry		
Dav Pilkey		
Marie Hélène Poitras		
Jacques Poulin		
Philip Pullman		
Kathy Reichs		
Anne Rice		
Mordecai Richler		
Rick Riordan		
Nora Roberts		
Rainbow Rowell		
J.K. Rowling		
Rachel R. Russell		
Louis Sachar		
Sonia Sarfati		
Robert J. Sawyer		
Patrick Senécal		
Miriam Sexton		
Destin Shaw		
Sara Shepard		
Robert Siegler		
Lemony Snicket		
Jerry Spinelli		
Danielle Steel		
Maggie Stiefvater		
Allan St. Pierre		
Mark Strauss		
Amy Tan		
Laini Taylor		
Raina Telgemeier		
Gilles Tibo		
Miriam Toews		
Alvin Toffler		
J.R.R. Tolkien		
Mélanie Watt		

Appendix H

English and French Word-Recognition Checklist

Word-Recognition Checklist

Below you will find a list of French and English words. Some of these words are real words, and some are not. Please put an **'x'** beside the words that you recognize as being **real words**. Please do not guess.

Please start with the French words:

French Words	Real		French Words	Real
adorable			longtemps	
boignon			malin	
caméléon			médicament	
chaise			nationalité	
croix			parenté	
d'assoint			pateau	
décidé			pentants	
dépouiller			piéton	
dépourvu			ponte	
desentrez			pretons	
elars			rançon	
els			réfléchi	
enlever			remposeé	
etez			réveillon	
exploter			sillage	
fouiller			soulangerie	
fourrage			tadelle	
gaisson			tençons	
hier			tonseur	
héréditaire			touvertes	
Joël			trahir	
lace				

Please continue with the English words:

English Words	Real		English Words	Real
abode			impetus	
antic			klight	
aphe			molten	
aver			mooror	
avire			optician	
bask			overplea	
bugle			poignant	
burntout			postulate	
canter			ramification	
carace			rew	
chalipmentary			ruptious	
coax			sall	
copious			shun	
dinghy			strickling	
dirge			sundry	
dreep			tensile	
eighful			thouple	
elliptical			toulir	
fallacy			tulip	
farlist			verve	
gradful			waggish	
guise				

Appendix I

Consent Form

INFORMATION AND PARENTAL CONSENT FORM

Study Title: Examining the Links between Spelling, Vocabulary, and Reading for Enjoyment
Researcher: Brittany Tremblay
Researcher's Contact Information: brittany.tremblay@mail.concordia.ca
Faculty Supervisor: Dr. Sandra Martin-Chang
Faculty Supervisor's Contact Information: s.martin-chang@concordia.ca
(514) 848-2424 x8932, 514-226-6250
Source of funding for the study: Fonds de recherche du Québec - Société et culture; Natural Sciences and Engineering Research Council of Canada

You and your child are being invited to participate in the research study mentioned above. Please read this form carefully before deciding if you and your child would like to participate. If there is anything you do not understand, or if you want more information, please ask the researcher.

A. PURPOSE

The purpose of this study is to investigate the links between spelling, vocabulary, and reading for enjoyment in both English and in French.

B. PROCEDURES

If you participate, you will be asked to answer a few questions and complete a short checklist. Both are attached to this form. If your child participates, he/she will be asked to complete spelling and vocabulary measures, as well as questionnaires and checklists with the researcher. In total, your child's participation in this study will take about 60 minutes.

It is our hope that your child will benefit personally from working with Brittany. He/she will be contributing to our understanding of how reading develops in children. The findings from these types of studies are influential in the development of educational programs, and your participation as well as your child's participation would be extremely appreciated.

C. RISKS AND BENEFITS

There are no risks associated with this study. The potential benefits include:

A) Exposing your child to new vocabulary words in English and in French,
B) Having your child work with a trained graduate student from Concordia University,
C) Adding to the scientific understanding of how reading develops in children.

D. CONFIDENTIALITY

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

We will not allow anyone to access the information, except people directly involved in conducting the research. We will only use the information 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 be confidential and 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, 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. We will destroy the information five years after the end of the study.

F. CONDITIONS OF PARTICIPATION

You and your child do not have to participate in this research. If you sign this form, your child can still stop participating at any time he or she wants to. There are no negative consequences for not participating, stopping in the middle, or asking us not to use your child's information. You can also ask that the information your child provides is not used, and your choice will be respected. If you decide that you don't want us to use your information, you must tell the researcher before September 1, 2018.

As a compensatory indemnity for participating in this research, you will receive $5 for your participation and your child will receive one gift of approximately $15 in 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 your child from this list.

G. 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.

PARENT'S NAME (please print) _____

PARENT'S 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 (Brittany Tremblay). You may also contact their faculty supervisor (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.

Finally, please see the following page for a couple of questions that you as the parent/guardian can answer for our research purposes if you agree to participate.

Appendix J

Assent Form

UNIVERSITÉ Concordia UNIVERSITY

ASSENT FORM

Project Title: Examining the Links between Spelling, Vocabulary, and Reading for Enjoyment

Investigators: Brittany Tremblay & Dr. Sandra Martin-Chang

We are doing a research study about the links between spelling, vocabulary, and reading for enjoyment. A research study is a way to learn more about people. If you decide that you want to be part of this study, you will be asked to complete some questionnaires, checklists, spelling, and vocabulary measures. This will take approximately one hour.

There are no risks involved in participating. Not everyone who takes part in this study will benefit. A benefit means that something good happens to you. We think these benefits might be learning new vocabulary words in English and in French, working with a graduate researcher, and understanding how research works. You will receive a gift valued at $15 for participating.

When we are finished with this study we will write a report about what was learned. This report will not include your name or that you were in the study.

You do not have to be in this study if you do not want to be. If you decide to stop after we begin, that's okay. Your parents know about the study too.

If you decide you want to be in this study, please sign your name.

I, _____, want to be in this research study.

_____ _____

(Sign your name here) (Date)