MINORITY LANGUAGE ACQUISITION AND RETENTION: A STUDY OF CANADIAN-BORN ROMANIAN-SPEAKING BILINGUAL CHILDREN

by

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Abstract

Preserving a minority first language has been found to be very important for the overall personal and educational development of immigrant children. However, successful bilingual development involving a minority language is often challenging in situations where the majority language dominates communication not only provincially and nationally but also internationally. This dissertation investigates the conditions under which a first language (Romanian) can be acquired and maintained in an English-dominant setting as well as any impact that the L1 has on the L2 (English), to which the children are formally introduced upon entry to junior kindergarten.

Three children participated in this longitudinal study from the commencement of junior kindergarten (~ 4;0) until the start of grade 1 (~ 6;0). For the purposes of charting development (or possible attrition), language proficiency was assessed in Romanian and in English through separate measures of lexical (PPVT and Romanian-adapted PPVT), phonological (CTOPP and Romanian-adapted CTOPP), and syntactic and narrative (picture-story based instruments) abilities. In addition, the children’s communicative competence in the two languages was evaluated more holistically through audio recorded data of the children’s interactions in various naturalistic situations. Information about the
children’s home language practices was also obtained through interviews conducted with their parents.

The data collected allowed for a unique, psycholinguistically rich, and culturally well-rounded account of the bilingual development of Romanian-Canadian children. The results demonstrated that the children continued to develop their minority language alongside the majority language. However, the lack of formal schooling in Romanian seemed to have impeded the growth of the children’s academic vocabulary and, possibly, narrative skills in Romanian. This could be rectified through formal minority language education. The findings also demonstrate that two years of schooling in English narrows and, in some respects, even erases the gap between the English-as-L2 children and their monolingual counterparts.

This study provides unique data on bilingual Romanian-Canadian children. The specially adapted vocabulary and phonological tests in Romanian make it possible to examine the development of the minority and majority languages side by side. Also, the longitudinal design allows for capturing change over multiple points in time within each of the two languages.
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Dedication

I dedicate this thesis to the memory of my father whose hard life and dedication to the family have been my source of motivation. I would not be who I am today without him in my life.

(Dedic aceasta teza memoriei tatalui meu a carui viata dificila si dedicatia pentru familie m-au motive.)
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Chapter 1: Introduction

The primary objective of this dissertation is to document the bilingual development and bicultural experiences of Romanian-speaking Canadian children from the ages of approximately 4;0 years to 6;0 years. More specifically, the study sets out to determine whether, despite attending an English pre-school, these children continue to develop their home language (L1) when supportive conditions are in place. In the event of L1 attrition the study aims to discover which areas of linguistic knowledge are prone to loss: lexical, syntactic, phonological or communicative. Furthermore, the study examines the acquisition of the children’s L2, in this case, English, and the influence the L1 appears to have on the acquisition of L2.

Data were collected over a period of two years from three Canadian-born Romanian-speaking children. These data were then analyzed both quantitatively and qualitatively. To determine the children’s language input and use patterns as well as their families’ attitudes towards languages and commitment to L1 maintenance, a structured interview format with the parents was used. The children’s knowledge of the minority language was assessed using two newly developed instruments (Romanian-adapted PPVT-4 - Peabody Picture Vocabulary Test 4, and Romanian-adapted CTOPP - Comprehensive Test of Phonological Processing) as well as through narratives and monthly recordings of free conversations. The children’s knowledge of the majority language was evaluated using two standardized measures (PPVT-4 and CTOPP) as well as through story-telling tasks. In addition to investigating language development over time, crosslinguistic influence was also examined through determining whether there is a cognate advantage in the English receptive vocabulary knowledge test as well as through establishing the rate of code-switching in the narratives.

Recent interest in the language retention of bilingual children, a growing segment of the school children population in Canada, marks the realization that preserving children’s first language is important for the children’s overall personal and educational development (Cummins, 2000; Garcia, 2003; Wong Fillmore, 2000). Language-minority children with an immigration background who are raised in Canada face a dual goal with regard to language learning. There is, on the one hand, the desire to preserve their heritage language, generally learned at home before starting school. There is also the
need to learn the majority language that is formally taught in school settings and is the main medium of communication in the larger community. In an ideal world, the two languages continue to develop in a balanced fashion leading to harmonious bilingual development. However, this is often not the case. Several studies show rapid language shift when the children enter school and are exposed to many hours of English every day (Cummins, 1993; Taylor & Wright, 1989; Wright, Taylor & Macarthur, 2000; see Allen, 2007 for a complete review).

Given the tremendous benefits of bilingualism that extend from early childhood to old age, such a situation is worrisome. The cognitive, academic and social benefits that bilingual children enjoy have often been underlined in the literature. Cummins (2000) pointed out that there have been almost 150 empirical studies carried out in the last 30 years or so and they have reported ”positive links between additive bilingualism and students’ linguistic, cognitive, or academic growth” (p. 37). Among the benefits of additive bilingualism mentioned in the literature, bilingual children enjoy greater metacognitive skills (Bialystok, 2001; Cummins & Swain, 1986; Hakuta & Diaz, 1985); have superior control of attention that enables them to be more efficient problem-solvers (Bialystok, 2001); do better academically (Cummins, 1996; Krashen, 1998); and form better family relationships and stronger links to their heritage (Garcia, 2003; Wong Fillmore, 2000). Cummins (2001) succinctly sums up the key findings of this body of research:

Strong and uncompromising promotion of L1 literacy is a crucial component, but we should adopt both/and rather than an either/or orientation to L1 and L2. When promoted together, the two languages enrich each other rather than subtract from each other. (p. 121)

Despite the overwhelming body of research that points out the benefits of bilingualism, there have been studies that have argued that bilingualism can adversely affect the language development of children. A variety of studies point out that growing up with two languages delays the development of each of the two languages when compared to the language development of monolinguals. This has been particularly documented for vocabulary (August, Carlo, Dressler & Snow, 2005; Cobo-Lewis, Pearson, Eiler, & Umbel, 2002; Hoff & Elledge, 2005; Oller & Pearson, 2002; Pearson &

How can studies in the field of child bilingual acquisition yield such conflicting results? An intuitive and plausible explanation is that bilingual children’s language experiences are divided between two languages and therefore it takes them longer to accumulate the same amount of input data to acquire language structures at par with monolingual children (Gathercole & Thomas, 2009). However, growing evidence indicates that as the children’s exposure to the two languages increases, the gap narrows considerably, leading to virtually no differences between the bilingual and monolingual children (Gathercole, 2007; Gathercole & Hoff, 2007; Oller & Eilers, 2002). In other words, what starts as being a possible disadvantage disappears as the bilingual children grow older, after which the benefits of having two languages becomes much clearer.

Shin (2005) further points out that the contradictory findings should not be surprising since a bilingual child develops competencies in the two languages to the extent required by his/her communicative needs, and since these needs and uses of the languages are often very different (e.g., one language for school, one for home, in the case of linguistic minority children), children cannot be expected to be fully proficient in both languages. Adopting a different line of argument in explaining the contradictory results, Swain and Cummins (1979) explain that the benefits of bilingualism are often associated with immersion programs where learning of an L2 does not entail the loss of L1. For example, in Canada, in the case of English-speaking monolingual children whose parents opt for French immersion schooling for them, children’s L1 is still valued and supported and it is not in danger of disappearance. The situation changes when it comes to linguistic minority children who are forced to learn the majority language without necessarily being encouraged to maintain their heritage language. In many cases, these children’s L1 is not seen as a treasure that can be capitalized on but rather as a deterrent in L2 learning or, at best, as irrelevant to the child’s L2 development. In such a case, the acquisition of the majority language is quite unproblematic across children whereas the acquisition and maintenance of the minority language can be hampered under reduced input and lack of support.
One important caveat when examining the studies that yielded contradictory evidence about the benefits of growing up with two languages is that they lack contextual information like socioeconomic background, participants’ linguistic history, or the degree of exposure to both L1 and L2, all factors linked to bilingual development outcomes. In fact, such contextual information is critically missing from the majority of research on early bilingual development (Bialystok, 2007; De Houwer, 1995; Shin, 2005). Of crucial importance as well is the child’s L1. A major shortcoming of most previous studies is that the children were treated as a homogenous group when, in fact, the children had different L1s. Understanding whether and how children’s first languages add to the ease or difficulty of acquiring an L2 is extremely important and could explain why some children are more successful at staying bilingual and some others become monolingual in the dominant language. The increasing population of minority-language children in Canada (Statistics Canada, 2007) and the lack of formal research available that describes the language situation of bilingual Romanian-English children is another reality that adds to the necessity of minority language bilingual studies.

In an attempt to address some of the limitations of the previous studies, the present study (1) adopts a psycholinguistic approach combined with a sociolinguistic one that takes into account the micro contexts within which the children are growing up, (2) investigates minority language development over time in young bilinguals from an ethno-linguistic minority community in Canada using newly developed vocabulary and phonological skills tests constructed for the purpose of this study, (3) investigates the influence the minority language has on the development of the majority language, and (4) makes suggestions for promoting the acquisition and maintenance of heritage languages by minority language children. The language pair of interest in this study, included two genetically related languages of English - the majority language - and Romanian, which is a minority language spoken in Canada by the Romanian ethno-linguistic community. A thorough review of the literature on bilingualism reveals that the Romanian-English combination in childhood bilingualism has never been studied in any depth in a Canadian context before.

The conceptual framework that I will use for this study is based on Cook’s (1991; 1992) notion of multicompetence, which views bilingualism as more than the sum of the
two languages in question. Cook asserts that individuals who use more than one language have a distinct compound state of mind which is not the equivalent with two monolingual states. Using the same line of argument, Grosjean (1989) asserts that a bilingual does not represent the sum of two complete or incomplete monolinguals but rather an individual who has a unique linguistic system. By adopting the multicompetence perspective which views the bilinguals’ linguistic repertoires as unique, dynamic and interrelated, the present study will offer a comprehensive view of the children’s linguistic knowledge by examining the development of both languages, the possible interaction between the two, and the different contexts in which the languages develop.

The next chapter, provides an overview of the relevant research to date on bilingualism and the bilingual child, the presence of Romanians in Canada, as well as the linguistic competence of bilingual children. Following this review of the literature, Chapter 3 describes the methodology of the study. Chapter 4 goes on to present the results and serve as the basis for a discussion of the findings and the limitations of the study contained in Chapter 5. The concluding chapter discusses the research and pedagogical implications of the findings and explores possible future research directions.
Chapter 2: Literature Review

2.1 Bilingualism – Definition and Types

The present study looks at childhood sequential but overlapping bilingualism. The children involved acquired their languages sequentially, with Romanian being the language introduced at birth and used almost exclusively until the age of 4, at which point the children started attending kindergarten and were exposed daily to English in an academic setting. After the age of 4 and during the duration of the study, the children continued to experience and use both languages - one at home – Romanian, and one at school – English. However, to characterize the type of bilingualism examined in this study, the term “bilingualism”, as used in a variety of contexts in the world, needs to be discussed.

Bilingualism is a worldwide phenomenon that can be found in practically every country, every level of society and every age group (Grosjean, 2013). Baker (2006) estimates that between half and two thirds of the world’s population is bilingual or multilingual. In fact, it is practically impossible to locate a society that is purely monolingual. Cook (2002) asserts that today there are only “a handful of isolated pockets of ‘pure’ monolinguals, now hard to find even in the mountains of Papua New Guinea” (p. 23). Similarly, Bialystok (2001) points out that the notion of “pure monolingual” is, by the time one reaches adulthood, rather improbable, given inevitable exposures to words in other languages in life.

Despite the fact that there seems to be consensus on the widespread bilingualism phenomenon, it is not easy or simple to define what it means to be bilingual. The most simplistic definition of a bilingual would be someone who speaks two languages. However, this definition poses a few difficulties. First, one issue that remains difficult to establish is how well someone should speak the two languages to be considered bilingual. In other words, it needs to be settled whether or not there is a minimal threshold of language proficiency to allow someone to qualify as a bilingual. For example, can a child who grew up speaking a language at home and started attending school in another language be considered bilingual? Or, is a bilingual individual someone who has equal competence in both languages? We also then need to establish
what it means to be a balanced bilingual. Is it someone who can communicate well, both in spoken and written discourse in both languages? Or, considering that bilinguals use their languages for different purposes in different contexts and to accomplish different things, and thus have their level of fluency dependent on their needs, should we welcome to the status of bilingual anyone who can use their languages in different domains of life to accomplish things? These are just a few issues that make determining exactly when someone becomes bilingual as either arbitrary or impossible.

To solve the problem of fluency that has been attached to the notion of bilingualism, recent research has drawn our attention to the importance of use as the defining factor (Grosjean, 2013; Mackey, 2000). Mackey (2000) presents a framework that defines bilingualism, to be “a behavioral pattern of mutually modifying linguistic practices varying in degree, function, alternation, and interference” (p.27). Thus, bilingualism involves the question of degree (how bilingual a person is), function (what a person uses his or her language for), alternation (to what extent a person alternates the two languages and under what conditions he/she switches from one language to another), and language transfer (how one of the languages influences the use of the other). Mackey’s definition underlines that bilingualism is a relative concept and it depends on the circumstances a bilingual uses the two languages, the degree of usage, which in turn, determines how well one masters the two languages and how the two linguistic systems influence each other. In the same line of argument, Grosjean (2013) cautious against a common misconception that bilinguals master the two languages equally and fluently. In reality, the majority of the bilinguals acquire and use the two languages to different degrees, for different purposes, in different contexts, with different people and to accomplish different goals.

Using the guidelines and definition above, the following section characterizes bilingualism and the children involved in the present study.

2.2 How Do We Characterize Bilingual Children?

Research in the field of child bilingualism has accounted for bilingualism within a variety of frameworks: linguistic, cognitive, social, and developmental (Butler & Hakuta, 2004).
Genessee, Paradis, and Crago (2004) distinguish between types of childhood bilingualism dimensions: (1) whether the children acquired the two languages simultaneously from birth or sequentially, after the age of 3, when one of the languages was already established; and (2) whether the children are part of the majority ethnolinguistic community or the minority ethnolinguistic community. Both distinctions are of utmost importance as they impact the outcomes of developing and maintaining the two languages. They are also relevant for the children in this study who are sequential bilinguals and belong to a minority ethnolinguistic community.

Linguistic minority children often fall into the sequential bilingualism group as they acquire their first language at home and in their community and later, are exposed to the second language when they enter school. The cutoff point for differentiation between sequential bilinguals and simultaneous bilinguals is typically suggested at the age of 4 mainly because a large number of studies established that by the age of 4, when exposure to the second language begins, the basic foundations of the native language are in place and fairly stable (Guasti, 2002; O’Grady 1997; Rothweiler, 2006; Snyder 2007). Furthermore, Genessee, Paradis, and Crago (2004) point out that it is after the age of 3, that the effects of knowing and using another language can be more evident when learning another language. Equally important, Cummins’s developmental interdependence theory (Cummins, 1979) suggests that the growth in a second language is dependent upon a well-developed first language and his threshold hypothesis suggests that a child must attain a certain level of proficiency in both the native language and the second language for the bilingual child to benefit from being bilingual (Cummins, 1984, Cummins, 2000). In other words, a child’s first language skills must become well developed to ensure that their academic and linguistic performance in the second language is maximized. However, it needs to be cautioned that, despite being fairly stable at the age of 4, the language remains highly vulnerable and prone to loss if the introduction of the second language leads to reduced input in the first language.

The second classification of bilingual children proposed by Genessee, Paradis, and Crago (2004) refers to whether the children are part of the majority ethnolinguistic community or the minority ethnolinguistic community. The language from the majority community, as opposed to a language from the minority community, is widely used, has
high prestige, and receives public funding from the government, as is the case of English and French, the official languages in Canada. In contrast, the minority language is spoken by a minority community and it has less prestige and less social, economic and political power (Genesee et al., 2004), as is the case of Romanian and other non-official languages in Canada. This is significant, given that currently, about 20% of people in Canada have a minority language as their mother tongue (Statistics Canada, 2011). In addition, over 27% of the population of Ontario speak a non-official language, other than English or French as their mother tongue (Statistics Canada, 2012). According to Statistics Canada (2011), the City of Toronto, York Region, and Peel Region are the most linguistically diverse areas in the Greater Toronto Area (GTA). Statistics Canada (2011) has identified over 160 mother tongues in the Toronto Census Metropolitan Area. This highlights a very important aspect of the cultural and linguistic landscape in Canada in general, and Ontario and Toronto in particular, namely that the ethno-cultural and linguistic profile of Canada is becoming progressively multi-ethnic and multicultural (Statistics Canada, 2011). The profiles put forward by Statistics Canada also highlight the existence of children who grow up speaking their heritage language at home and in their community, and learning English or French as their majority language. The implications for the education of these children are huge. Many children bring with them a wealth of linguistic resources that need to be supported and promoted in order to enable these children to maximize their full potential in bilingual and bicultural contexts as they grow up.

2.3 Romanians in Canada

In order to get a better understanding of bilingual experiences of Romanian Canadian children, it is important to describe their families, the history of their heritage, the language they speak, and the background to their settlement in Canada. This section sets out the context for the current study by outlining the social and economic backgrounds of the Romanian immigrants who arrived in Canada in three main waves (Culic, 2012), focusing primarily on the most recent wave which accounts for the vast majority of the present Romanian population in Canada and which includes the parents of the three participants in this study. Since the question of successful language minority
maintenance depends at least in part on the context of acquiring the two languages (De Houwer, 1995; Deuchar & Quay, 2000), an account of the context in which the children in the present study learn their first language is necessary. There is growing evidence that for children who grow up in bilingual communities where one language is dominant over the other, the acquisition of the dominant language is most often quite unproblematic, while the acquisition of the minority language becomes difficult if the input is reduced (Allen, Crago, & Pesco, 2006; Meisel, 2006). Other studies report that in certain immigrant contexts there is “suppression” of the L1 in bilingual/L2 learners (Oller, Jarmulowich, Gibson & Hoff, 2007). Such research suggests that at least in certain contexts bilingual children may never fully acquire equal mastery in the two languages.

Statistics show that the great majority of the Romanians who immigrated to Canada arrived in this country after 1990 when the change of the regime in Bucharest allowed people to travel freely. See Appendix A for an account of this phenomenon. According to the 2006 Census done by Statistics Canada (Statistics Canada, 2006), Romania is among the two most common European countries of origin for newcomers in 2006 along with the United Kingdom. In fact, immigrants born in Romania represented 2.5% of all newcomers between 2001 and 2006, surpassing the 2.3% of newcomers born in the United Kingdom.

A useful insight of the data is given by the immigrants’ occupation. The selection of candidates to immigrate to Canada is very strict in Romania. Almost all Romanian immigrants are university educated and many had distinguished professional careers in Romania. According to Slade (2004), Romania was the country of origin of the most important number of immigrant engineers to Canada in 1992 and 1993 and the third most important in 1994 and 1995. For the present study, I decided to choose children whose parents have a university degree; thus, they will mirror the majority of bilingual children in Canada whose native language is Romanian.

Toronto and the Greater Toronto Area (GTA) form a perfect real-life laboratory in which to study language acquisition by immigrant children. According to Statistics Canada (2011) Toronto is a mosaic of languages with almost half of its population (45%) having a mother tongue other than English or French. Almost a third of its population (28%) regularly speaks a language other than English or French at home, which holds
true for almost 19% in the rest of the GTA. Romanian is the 26th non English mother
tongue among a list of 73 non-English mother tongues reported in the 2011 Census, out
of which 56% of its speakers use Romanian in their homes on a regular basis (Statistics
Canada, 2011). The numbers speak an important story. More than half the ethnic group
chooses to make the mother tongue the primary language used in their home, showing
value for their heritage and culture. The majority of Romanians are settled in the northern
end of Toronto, within the municipalities of Vaughan, Richmond Hill and Aurora
(Statistics Canada, 2011) and form little “pockets” of ethnic Romanian areas. This
residency cohesion supports minority language maintenance, as living in a community
where the language is spoken offers more opportunity for use of the minority language
and more varied input, both referred to as conditions of successful language development
and maintenance (De Houwer, 2009). However, this does not exclude the possibility of
children being exposed to the majority language at home starting at early ages. The
official status of English and the majority of the population’s use of English sets the
ground for early exposure to the majority language despite the use of the heritage
language in homes. Romanian children may be exposed to English from early ages
through watching TV and communicating with English-speaking peers, friends,
neighbors, etc.

2.4 The Romanian Language

Most of the Romanians in Canada are first generation adults whose dominant
language is Romanian. This includes the parents of the participants in this study.
Romanian is an Indo-European language that belongs to the Romance family, and has
strong lexical, grammatical and phonological links to Italian, French, Spanish,
Portuguese, and other Romance languages, being “the easternmost representative of the
family of Romance languages” (Cojocaru, 2003). Throughout the centuries, the language
suffered numerous external influences, mostly notable at the lexical level. Numerous
Slavic, Turkish, Hungarian and neo-Romance elements were absorbed by the language.
At the grammatical level, Romanian is one of the most conservative Romance languages
(for example, it is the only Romance language that preserved three genders from Latin),
perhaps due to the fact that its speakers were located in isolation from the rest of the
Romance world, which led some researchers to consider it the most “pure” of Romance languages in terms of grammar, that is, the closest to Latin (Cojocaru, 2003).

Although English belongs to the same language branch, Romanian and English are typologically different. For example, the usual word order for English is subject-verb-object (SVO), while the Romanian word order is less restrictive, allowing for combinations like SVO but also VOS, or OVS. In addition, unlike English, Romanian is a null subject language, i.e., it allows independent clauses to lack an explicit subject, with the missing subject being indicated by the morphology of the verb. Also, while English has lost many of its inflections, Romanian has retained its rich inflectional characteristic and is thus governed by nominal agreement. This means that the forms of different modifiers like adjectives, numerals, pronominal adjectives depend on gender and number of the noun.

2.5 Linguistic Competence in Minority Language Children

Questions concerning the degree of awareness that minority language children have of their language and the majority language, plus the extent of their linguistic abilities in comparison with those of the monolingual children who do not live in a bilingual situation have been at the heart of previous research with bilingual children.

Bilingual children are often divided according to their linguistic competence in the two languages. Critical to the focus of this review is the consideration in recent years given to the importance of the level of competence achieved by children in the L1 in determining the rate, quality and outcomes of their second language acquisition. Two hypotheses of particular relevance to this discussion are the “threshold level hypothesis” and the “interdependence hypothesis”. The threshold level hypothesis (Cummins, 1976, 1979) states that a threshold level of linguistic competence must be attained so that the cognitive advantages of bilingualism become evident. Simply put, only when a child has reached a threshold of competence in his/her first language can he/she successfully learn a second language without losing competence in both, a state that has been called in the field “additive bilingualism” (Lambert, 1974). Building on this theory, Cummins (1984) further formulates the “interdependence hypothesis” asserting that second language competence depends upon the level of development of L1. Cummins distinguishes
between two types of language mastery: “basic interpersonal communication skills” (BICS) refers to everyday usage of language, while “cognitive academic language proficiency” (CALP) is achieved when the speaker is able to use the language as a cognitive tool for higher reasoning processes. Cummins argues that if a child achieves CALP in L1, this competence will transfer to L2, setting the child for success in school. If, however, the child has not achieved CALP in L1, this will adversely impact his/her academic learning in general and learning of the L2 in particular. Therefore, Cummins (2000) emphasizes that the linguistic and academic benefits of additive bilingualism are strong reasons to help students maintain their mother tongue while they acquire English:

Not only does maintenance of L1 help students communicate with parents and grandparents in their families, and increase the collective linguistic competence of the entire society, it enhances the intellectual and academic resources of individual bilingual students. (p.38)

This view has been adopted in recent years by researchers in the field of language maintenance, who have advocated that minority languages should be preserved and developed for a linguistically and culturally diverse world. Garcia (2003) in a comprehensive review of the existing literature on language maintenance and shift concludes that ethnic language maintenance is of crucial importance for many reasons but mainly because the language itself provides a direct way for the people to connect with their heritage. On the same line of argument, Cummins (2000) states that minority-language students develop a stronger sense of self and are more likely to apply themselves academically when teachers show them that their language and culture are welcomed in school. Research reinforces these views by offering empirical evidence that supporting immigrant children’s first languages and valuing their culture enhances their English literacy (Fitzgerald, 1995; Wagner, 1998). McCarty’s (1993) case study of a Navajo–English bilingual program and Hayes, Bahruth, and Kessler’s (1991) study of immigrant Mexican-American students in South Texas showed that when schools recognized and valued students’ personal and cultural identities, students were more likely to succeed as literacy learners. In contrast, children who lost their L1 in the acquisition of English were hindered in their ability to read and write in English (Wong-
Fillmore, 2000). These theoretical views underline the importance of maintaining L1, and have also been expressed by the families of the children participating in the present study.

It also should be noted that in recent years, the number of studies on bilingualism and bilingual cognitive development has grown substantially, and a bilingual perspective has increasingly replaced the monolingual one: “It is clear that a reasonable account of bilingualism cannot be based on a theory which assumes monolingual competence as its frame of reference.” (Romaine, 1989, p.282) According to Grosjean (1989) and Cook (1991, 1992) research on bilingualism has been under the influence of the monolingual view for decades and existed under the assumption that bilinguals are the sum of two monolinguals. This view had an important impact on the field of bilingualism where multicompetence, viewed as competence of two monolinguals put together, has been understood in terms of achievement of native or near native-like proficiency in the L2. This produced a limited and static picture of the bilingual’s language abilities and did a disservice to bilinguals who were often viewed as deficient users of two languages rather than multicompetent speakers able to navigate within two languages. In the same line of argument, Grosjean (2008) argues that it is not appropriate to compare bilinguals’ language performance on traditional monolingual tests with the monolinguals’ performance. Instead, research with bilinguals should account for the context of acquisition, the nature of bilingual language development as well as the structure and organization of the bilinguals’ language competence.

The pedagogical emphasis on monolingualism as the norm has been gradually shifting away from reliance on the monolingual native speaker as the language authority to a new understanding of multicompetence that is more holistic in nature (Cook 1991, 1992). The term multicompetence proposed by Cook (1991, 1992) captures this interpretation of the bilingual perspective and involves the overall system of a mind or community that uses more than one language. Cook describes multicompetence as “the compound state of a mind with two grammars” (1991, p.112). Thus, multicompetence, as proposed by Cook becomes a framework for bilingualism that changes the perspective from which second language acquisition is viewed. What is important in this perspective is that it views bilingualism not as two languages in one but rather two languages that interact with and influence each other. In fact, the concept of multicompetence, by
looking at the whole learner’s mind, directed attention towards reverse transfer from the second language to the first and other forms of transfer (Jarvis & Pavlenko, 2009). This is particularly relevant for the sequential bilingual children involved in the present study as the interest is to document, among other things, the influence the introduction of an L2 has on the development and maintenance of the L1.

2.5.1 Crosslinguistic Influence

The effect that one language has on another language is known as cross-linguistic influence, a term that traditionally implies both positive transfer and interference (Yip, 2013). These two effects have been often reported and agreed on in the literature. What remains a matter of debate, though, is when they occur, to what extent they do, what their directionality is, and how to interpret them.

The Separate Development Hypothesis (De Houwer, 1990, 2009) implies that the bilingual child develops separate linguistic systems, in the same way that the monolingual child does in acquiring the same languages. This mirrors a particular view of bilingualism that considers bilinguals as two monolinguals in one person. On the other hand, the Interdependent Hypothesis formulated by Paradis and Genesee (1996) posits that while the bilingual child’s linguistic systems are separate they influence each other. This wholistic (and more recent) view of bilingualism states that “the bilingual is NOT the sum of two complete or incomplete monolinguals; rather, he or she has a unique and specific linguistic configuration.” (Grosjean, 1989, p.6) Support has been brought to both hypotheses. Several European studies have found evidence for separate development (De Houwer, 1990, 2009; Meisel, 1994, 2001), while other studies have observed interdependent development (Dopke, 2000; Silva-Corvalan & Montanari, 2008; Yip & Matthews, 2007). There are at least two explanations for the conflicting claims and findings. First, the children in the aforementioned studies had various levels of proficiency in the two languages. Cross-linguistic influence is most prevalent and most often observed when children have a dominant or stronger language that influences the weaker language, as is the case in Yip and Matthews’ (2007) study where the children’s Cantonese was stronger than English and consequently had a lot of observable effects on it. Another possible explanation is that the cross-linguistic influence may be more present
and therefore noticed in certain domains of linguistic knowledge. Mok (2011) cites evidence of cross-linguistic influence between Cantonese and English in speech rhythm. Yip and Matthews (2007) observe the same phenomenon in the syntactic development of the bilingual children who had Cantonese as their dominant language. In Nicoladis’s (2006) study, the bilingual French-English children show signs of cross-linguistic transfer with regard to the adjective placement.

Hulk and Muller (2000) argue that there has to be an overlap condition between the languages for the cross-linguistic influence to occur, where one language allows for one condition and the other language allows for two conditions of which one is overlapping with the first language, with ambiguity in at least one language. One such example of the overlap condition involves adjective placement in English and Romanian. While English allows only for adjectives placed before nouns, Romanian allows for both prenominal and postnominal adjectives, with the latter as a default, as in Fig. 1.

<table>
<thead>
<tr>
<th>English</th>
<th>Romanian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postnominal</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>O călătorie plăcută</td>
</tr>
<tr>
<td></td>
<td>A trip nice. Fem</td>
</tr>
<tr>
<td></td>
<td>“a nice trip”</td>
</tr>
<tr>
<td>Prenominal</td>
<td>a big</td>
</tr>
<tr>
<td></td>
<td>O mare problemă</td>
</tr>
<tr>
<td></td>
<td>A big problem. Fem.</td>
</tr>
</tbody>
</table>

*Figure 1. Structural overlap between English and Romanian in adjective placement*

Another common example of structural overlap at the syntax level involves the subject realization. Romanian is a null-subject language which means that its grammar allows an independent clause to lack an explicit subject. For example, in Romanian the subject “she” can be either explicit or implicit:

“Maria nu vrea să mănânce”. *Maria not want to eat. “Maria does not want to eat”*

“Nu vrea să mănânce”. *Subject not want to eat. “(He/She) does not want to eat”.*

The subject “(s)he” in the second sentence is only implied in Romanian while English requires an explicit subject in this sentence.
An example of the overlap condition at the lexical level involves the partially overlapping cognates. While English and Romanian share a large number of complete overlapping cognates, there are also a considerable number of words that share just part of their meanings depending on the contexts in which they are used. For example, in Romanian, “etichetă” can also mean *label* or *sticker*, in addition to the cognate sense, that of *etiquette*. The overlap between the English option and the second Romanian option fulfills the condition of transfer.

Indeed, the structural overlapping/ambiguity proposal can explain many cases of cross-linguistic transfer in bilingual child acquisition like word order in subordinate clauses in German (Dopke, 1998), verb-object compounds in French-English bilingual children (Nicoladis, 2003), prenominal adjective placement in French-English bilingual preschoolers (Nicoladis, 2006), as well as object drop in Dutch-French and German-Italian bilingual children (Hulk & Muller, 2000). However, several studies reported transfer between the two languages in absence of the overlap/ambiguity condition (Nicoladis, 2002; Yip & Matthews, 2000). The lack of agreement on whether the proposal can completely explain the circumstances under which transfer takes place begs the need for further research. The lack of research concerning bilingual Romanian children only adds to this necessity. Given that some structures in the Romanian-English combination do meet the overlapping/ambiguity conditions while others do not, it would be interesting and useful to document cross-linguistic transfer between the two languages with bilingual children.

### 2.5.2 Phonological Skills of Bilingual Children

Phonological systems vary across languages in systematic ways (Maddieson, 1984) setting the perfect context for studying the effects of early bilingualism on language development. Phonological development has been most often referred to in the literature for children learning one language. Previous studies have established that monolingual children across languages produce highly similar sounds and exhibit similar sequence patterns until the age of 18 months (MacNeilage, Davis, Kineey & Matyear, 2000). Children with different linguistic backgrounds produce utterances with simple syllables and word shapes, mainly CV and CVCV and exhibit infrequent use of
consonant clusters and final consonants (Anderson & Smith, 1987; Goldstein & Cintron, 2001; Oller & Eilers, 1982). However, some aspects of early phonological development are language specific and the age of acquisition depends on the complexity of the sound articulation as well as the frequency in the input (Gildersleeve-Neumann, Pena, Davis & Kester, 2009).

Recently, however, phonological acquisition studies have turned their attention to bilingual children. Bilinguals grow up in a dual language environment and develop the ability to use knowledge and skills in one language for more accurate production in the other language (Paradis, 2001), leading to rapid development and positive transfer in both languages. Negative transfer is considered to appear when phonological properties that have low frequency differ in each language. Forms that have subtle differences between them in the two languages may also be subject to negative transfer effects.

Several theories have tried to predict how phonological skills in bilingual children develop. One such theory is the Unified Competition Theory (MacWhinney, 2005) that provides a framework for examining the transfer of the phonological properties in sequential bilinguals. This theory suggests that children are sensitive to the phonological properties that are common across languages. The information that is more frequent and reliable is considered to have strong cues and thus be acquired more easily. Because Romanian and English have, in general, similar consonant properties, consonant cue reliability for these bilingual children is expected to be strong. Therefore, Romanian-English sequential bilinguals are expected to rely successfully on similar Romanian consonants in their acquisition of English.

In contrast to the consonant systems, the Romanian and English vowel systems differ considerably. As a result, cue reliability for Romanian vowels may not be as strong as for consonants for a sequential bilingual child learning English as a L2. Because Romanian has fewer vowel sounds than English, Romanian-speaking children learning English will need to recognize and produce English phonemic distinctions that are allophonic or do not exist in Romanian.

Given that sequential bilingual children can use their knowledge of L1 to gain skills in L2 (McLaughlin, 1984), it is most likely that they will rely on the phonological knowledge in their L1 to acquire and produce the sounds in a second language. However,
children who become sequential bilinguals in the first 4 years of life, while having acquired most sounds and sound patterns of their L1 by the age of 4, have not completed the acquisition of their L1 phonological system. The phonological properties that are more complex articulatory and less frequent in the input are generally acquired later, after the age of 4 (Gildersleeve-Neumann, Pena, Davis & Kester, 2009) and include such examples as fricatives, affricates and liquids. Given this incomplete mastering of the L1 phonology and the introduction of the L2, there is indeed the possibility that the acquisition of an L2 will affect the development of the L1 phonology. In a study conducted with sequential bilingual children initially exposed to Spanish, Gildersleeve et al., (2009) analyzed how the introduction of the L2 English sound system affected the L1 Spanish sound system. The researchers found that speech sound accuracy in L1 was affected by the introduction of L2, the effect being particularly visible for the vowel system.

2.5.2.1 Romanian Phonological System

The Romanian phonological system has 7 vowel sounds and 21 consonants. There are two vowels that are specific to Romanian and that do not have an English equivalent: [ə] and [ɨ]. The other vowels are similar to the English vowels, but they are of medium length, i.e. they are shorter than long vowels and longer than the short vowels (Cojocaru, 2003) thus lacking the tense/lax distinction. Regarding the consonants, three out of the 21 sounds are slightly different from their English equivalents. The consonant [r] is rolled and includes a slight vibration of the tip of the tongue. The consonants [t] and [d] are dental consonants (their equivalents in English are alveolar). Finally, Romanian is a syllable-timed language, with syllables spaced at approximately equal intervals, while English is a stress-timed language.

Given these particulars of the Romanian phonology and the previous findings with bilingual children, it is expected that the children in the present study will exhibit both negative and positive transfer. We can expect that once English is introduced in kindergarten, the children will rely successfully on the similar Romanian vowels and consonants in their acquisition of English. However, when the cue reliability is weak, negative transfer is predicted from Romanian into English and the children will take their
time to recognize and produce English phonemic distinctions that are allophonic or do not exist in Romanian. For example, in English, /I/ and /i/ are distinct vowel sounds, whereas in Romanian, /I/ is an allophonic variant of /i/ and becomes a potential source of negative transfer for a Romanian monolingual learning English as a second language.

2.5.2.2 Phonological Processing Skills in Bilinguals

Phonological processing refers to the use of the sound structure of oral language to process written and oral information. There is consensus that a gap in the phonological processing skills leads to reading and learning difficulties (Adams, 1990; Stanovich, 1992). Research with school-aged children has identified three interrelated phonological processing skills that are important for reading and writing: phonological awareness, phonological memory and rapid naming.

Phonological awareness is the ability to manipulate individual sounds of one’s language (for a complete review see Anthony & Francis, 2005). Past research with children has established that phonological awareness is an important predictor of reading success (Bryant, MacLean & Bradley, 1990; Stanovich, 1992; Vellutino & Scanlon, 2001; Wagner & Torgesen, 1987). Research with bilinguals examining the role of phonological awareness in developing reading skills is concerned with determining whether phonological awareness in the L1 and L2 is a unitary concept or two related skills. In other words, do bilingual children benefit from having good phonological skills in their L1 when they are learning an L2? If indeed phonological awareness is metalinguistic knowledge, then bilingual children only need to acquire it once while acquiring their L1 (Durgunoglu, 2002; Sparks, Patton, Ganschow, Humbach, & Javorsky, 2008). This would mean that proficiency in L1 should highly influence and assist with the acquisition of an L2 (Durgunoglu, 2002). The findings of the research to date are contradictory, however, with some studies showing evidence that phonological awareness is indeed a metalinguistic skill that transfers across languages (Swanson, Rosston, Gerber & Solari, 2008; see Geva and Wang, 2001 and Durgunoglu, 2002 for reviews) and other studies cautioning that phonological awareness skills in the L1 and L2 are not always completely overlapping, and, therefore, the transfer is limited (Branum-Martin et al.,
2006; Gottardo & Mueller, 2009). The lack of agreement points to the fact that further research is needed.

Another important point to make in regard to phonological awareness and bilingualism is that the languages in which a child is bilingual has an impact on the extent of facilitation of phonological awareness in L1 for the acquisition of the L2. For example, tonal phonological awareness is relatively independent from the alphabetic phonological awareness, so knowing languages like Cantonese or Mandarin, in addition to English is less helpful than knowing a language that is genetically related to English (Bialystok, Majumder & Martin, 2003; Liow & Poon, 1998). This is an important point since the children in the present study are speakers of Romanian, a genetically related language to English and it is expected that their knowledge of an alphabetic language with transparent letter-sound correspondence (Romanian) will facilitate the acquisition of phonological awareness in English.

The other two skills that make up the phonological processing skill profile are phonological memory and rapid naming. Phonological memory is considered to be a general cognitive skill and thus its effectiveness in one language would transfer into another language (Jared, Cormier, Levy & Wade-Woolley, 2010). Rapid naming has also been shown to predict reading in monolingual children (Moll, Fussenegger, Willburger & Landerl, 2009) but it is not clear what the construct is tapping into (Jared, et al., 2010). Some studies suggested that rapid naming reflects the ability to form orthographic representations (Bowers & Wolf, 1993; Moll et al., 2009), others proposed that it assesses the automaticity of orthography to phonology at letter and letter-cluster level (Moll et al., 2009), while others suggested that it assesses working memory (Arnell, Joanisse, Klein, Busseri & Tannock, 2009). Nevertheless, since some of these are general cognitive skills, it is expected that they transfer across languages leading to an advantage for bilingual children (Gottardo, 2002; Manis, Lindsey & Bailey, 2004).

### 2.5.3 Lexical Knowledge of Bilingual Children

Building a large lexicon is an extremely important task for minority language children given the fact that vocabulary knowledge is an important component of literacy development. Previous research examining the vocabulary development in bilingual
children has found that bilingual children develop smaller vocabularies in each of the two languages as compared to their monolingual peers (Nicoladis & Genesee, 1996; Oller, Pearson & Cobo-Lewis, 2007; Umbel, Pearson, Fernandez, & Oller, 1992) and more slowly in each language than monolingual children (Mahon & Crutchley, 2006; Oller & Eilers, 2002). Since a large body of research suggests that vocabulary size is an important factor of academic success (August, Carlo, Dressler, & Snow, 2005; Ouellette, 2006; Rohde & Thompson, 2007; Swanson, Rosston, Gerber & Solary, 2008; Verhallen & Schoonen, 1993; Vermeer, 2001), such findings should be of concern.

However, Bialystok and Feng (2009) warn us that caution should be exercised when drawing conclusions about the vocabulary development of bilingual and monolingual children. The researchers point out that a distinction should be made between every day and academic vocabulary. It is very likely that bilingual children encounter some words in contexts in which they only use one language and so it is very likely that taken together the bilingual children’s vocabularies are at least equivalent if not larger than the vocabulary of monolingual children. In fact, to address the issue of smaller vocabularies in bilingual children, Bialystok, Luk, Peets and Yang (2010) performed a meta-analysis followed by an aggregate analysis of the existing studies on English receptive vocabulary knowledge. The data included the standard scores for the Peabody Picture Vocabulary Test – III (PPVT-III, standard scores Dunn & Dunn, 1997) obtained from 772 English monolingual children and 966 bilingual children with the age between 3 and 10. The results showed significantly lower scores for bilingual children when compared to monolingual ones. However, further item analysis revealed that the bilingual children were not at a disadvantage for academic vocabulary but rather at the words related to home life, which were most likely known by children in their L1. The findings are in line with previous research that found that bilingual children are not disadvantaged in academic and literacy achievement (Bialystok, Luk & Kwan, 2005) or academic uses of spoken language (Peets & Bialystok, 2013). Thus, Bialystok et al. (2010) conclude that what appears to be a disadvantage for bilinguals is just an empirical description that needs to be taken into account when designing studies that measure the verbal ability of bilingual children.
With regard to the assertion that bilingual children develop vocabulary more slowly in each language compared to monolingual children (Mahon & Crutchley, 2006; Oller & Eilers, 2002), Bialystok et al. (2009) caution that the generality of this claim is extremely difficult to apply to all languages and that the specific pairs of the languages that the children are learning will influence the rate of acquisition. Thus, it is expected that children whose languages are genetically related and share cognates will likely progress at a faster pace than the children who learn two languages that are structurally different and share no cognates. For example, children who are learning Romanian and English, whether simultaneously or successively, will most likely exhibit fewer delays in vocabulary acquisition in the two languages than children who are learning Vietnamese and English under similar circumstances.

Another strand of research conducted in recent years with bilingual children and vocabulary acquisition investigated whether a possible cognate advantage exists in school-age bilingual children. Cognates are words that share phonological and/or orthographic forms, and are typically semantically related although they are not always translation equivalents (Hall, 2002). When cognates are present, knowledge of one language is expected to assist with “meaning-making” in an unfamiliar language (Kelley & Kohnert, 2012). English and Romanian are genetically related having a significant number of Latin-based words and thus sharing a large number of cognates. This should increase the opportunity to recognize and use cognates as a mechanism for language transfer in Romanian speaking bilingual children who are learning English.

There is a robust body of literature that clearly demonstrates that adults are faster or more accurate in processing cognates as opposed to non-cognates in both writing and speaking (see Sánchez-Casas & García-Albea, 2005 for a review). However, when it comes to children, research provides conflicting evidence with regard to their ability to recognize and use cognates as a vocabulary learning strategy. Umbel, Pearson, Fernandez and Oller (1992) found that children from Spanish monolingual and Spanish bilingual homes achieved similar overall scores on both the Peabody Picture Vocabulary Test (PPVT, Dunn & Dunn, 1981) and the Test de Vocabulario en Imagenes Peabody-Adaptacion Hispanoamericana (TVIP-H, Dunn, Padilla, Lugo & Dunn, 1986) and responded correctly on cognates and noncognates at about the same rate (68% vs. 67%).
In a follow-up study, using the same tests, Umbell and Oller (1994) tested first, third and sixth graders and obtained similar results. The conclusion of the researchers was that children do not employ awareness of cognates as a vocabulary learning strategy.

In contrast, Malabonga, Kenyon, Carlo, August and Louguit (2008) report that recognition of cognates increases as the children progress academically. In order to test the cognate facilitation effect hypothesis, the researchers designed a Cognate Awareness Test (CAT) and administered the instrument to bilingual Spanish-English third, fourth and fifth graders. The researchers found no evidence of cognate facilitation effects for the fourth graders but, a year later, the same students exhibited a cognate advantage on a multiple-choice test of low-frequency English words.

The conflicting findings are due, at least in part, to the differences in the methodologies that the studies employed, the participants’ language characteristics, the questions explored, and the age of the children. Combined study results indicate that children’s sensitivity to cognate recognition is associated with a few factors, including grade level (Malabonga, Kenyon, Carlo, August & Louguit, 2008), amount of language exposure (Perez, Pena & Bedore, 2010), previous knowledge of the word concept in the L1 (Nagy, García, Durgunoğlu & Hancin-Bhatt, 1993), levels of L1 ability (Malabonga et al., 2008), and age (Kelley & Kohnert, 2012).

Also, it is important to point out that the majority of the studies that investigated the children’s sensitivity to cognates were conducted with children in grades 1 through 8. There is, however, one study that examined the influence of Spanish L1 on the acquisition of English L2 vocabulary with preschool bilingual children (Uchikoshi, 2006). Although the researcher found no relationship between L1 Spanish vocabulary comprehension scores and L2 English vocabulary production, she found that children who started kindergarten with higher scores on Spanish Vocabulary comprehension also had higher English comprehension scores than those who started with lower initial Spanish vocabulary comprehension scores. The findings suggest that there is an association between the children’s L1 and L2 vocabulary comprehension even at an earlier stage when entering kindergarten. The researcher speculates that knowing more words in Spanish led to knowing more words in English due to the presence of many cognates between Spanish and English.
In summary, the above studies suggest that lexical knowledge of L1 can assist with acquiring vocabulary in an L2 especially when the two languages share cognates. Given the scarcity of studies that investigate the preschoolers’s sensitivity to cognates and the inconclusive results of the existing studies with grade level bilinguals, it is important to further explore and determine when and how cognates can assist preschoolers with vocabulary learning.

2.5.3.1 The Romanian Lexicon

At the lexical level, unlike English, Romanian is a language that evolved from Latin but developed in isolation, due to geographical and historical circumstances. Therefore, the language has a core vocabulary of Latin words (of approximately 34.56% according to Maneca, 1996) and has the highest frequency of usage – 73.75%, according to the same source. However, being an Indo-European language, Romanian is genetically related to English and thus shares with it a fairly large number of cognates. These offer the possibility of transfer to occur for a variety of words, thus facilitating the acquisition of English by Romanian speaking bilingual children. Given the particulars of the two languages spoken by the children in the present study and the findings of previous research, it is expected that the children’s knowledge of Romanian will assist with acquiring vocabulary in English. However, it is expected that the children’s knowledge of words related to home life will be superior in Romanian while their knowledge of academic vocabulary in English will surpass the one they have in Romanian. Given the continuous input in Romanian after the start of formal education in English, it is also expected that the children will continue to develop their Romanian vocabulary during these preschool years.

2.5.4 Morphosyntactic Knowledge of Bilingual Children

Knowledge of morphosyntax entails knowing how morphemes are used in a language (e.g., “copil” (child) and the morphemes that change the meaning- “copi-i-i” (the children)) as well as the rules that govern the word combination in order to form a sentence (e.g., in English the subject always precedes the main verb; in Romanian, the subject can occur either before the main verb or after the main verb). Bilingual children
who learn and use their minority language at home and who are schooled in the majority language face the complex task of developing morphosyntactic skills in two languages. What makes the task particularly difficult is the fact that these children have less exposure on an average daily basis to each of the bilingual’s two languages, and thus the frequency with which they hear morphosyntactic structures in their input is lower. According to Usage-Based theory, the frequency and consistency of the morphosyntactic structures in the input determines both the acquisition sequences and rates of bilingual children (Lieven & Tomasello, 2008; Tomasello, 2003). Thus, the rates of morphosyntactic development for bilinguals would differ from monolinguals because the frequency of a structure in the input would be lower for bilinguals than monolinguals (Gathercole & Hoff, 2007). However, the findings in the available literature are contradictory.

On the one hand, there are studies that found differences between bilingual and monolingual children’s acquisition rates for various morphosyntactic structures (Gathercole, 2007; Gathercole & Thomas, 2005; Nicoladis, Palmer & Marentette, 2007; Perez-Leroux, Pirvulescu & Roberge, 2009; Thordardottir, Rothenberg, Rivard & Naves, 2006). On the other hand, there is also evidence that the differences between bilingual and monolingual children’s acquisition rates are either limited or non-existent (e.g. Gutierrez-Clellen, Simon-Cereijido & Wagner, 2008; Paradis, 2010; Paradis, Crago & Genesee, 2005/2006; Paradis & Genesee, 1996).

In their study with bilingual French preschool children, Perez-Leroux, Pirvulescu and Roberge (2009) investigated the acquisition of objects in French speaking children in both monolingual and bilingual contexts. The data indicated a bilingual delay in the children’s development of null object omission. The researchers link the delay to the limitation in the input specific to bilingual children and assert that the acquisition of the omission patterns of objects depend to a great extent on the lexicon, the development of which is in turn constrained within a bilingual context. The findings of this study mirror those in Muller and Hulk (2001) who found higher rates of null object retention for monolingual children than for bilinguals.

In contrast, Paradis, Crago and Genesee (2005/2006) analyzed objects in spontaneous language samples taken from three-year-old French monolingual and
French–English bilingual children. The rates of the object clitic production in bilinguals and monolinguals were almost similar (77% for bilinguals vs. 86% for monolinguals) leading the researchers to conclude that the bilingual-monolingual differences are either non-existent or negligible.

There are several possible explanations for the discrepancies reported in these studies. Paradis (2010) argues that one main reason for such discrepancies is the fact that the performance of the bilingual children is not analyzed in terms of dominant versus weak language. According to Paradis (2010) bilingual children only lag behind the monolingual children in their weaker or nondominant language. Several studies seem to support this view. Nicoladis, Palmer and Marentette (2007) found that French-English bilingual preschoolers lag behind monolinguals in terms of their accuracy in producing the past tense in both languages, but they did not analyze the children’s performance as a function of their dominant language. Similarly, Pirvulescu, Perez-Leroux, Roberge, Strik and Thomas (2014) bring evidence that when compared to their monolingual counterparts, English-French balanced bilingual children lag behind in terms of object omission for a longer period in both languages. However, the researchers found evidence for language dominance effects on the rate of omission in that children omitted less in the dominant language leading them to conclude that reduced and ambiguous input is responsible for this effect. In contrast, Paradis, Nicoladis and Crago (2007) found no differences between monolingual and bilingual 4 year olds in the accuracy with which they used the past tense in their dominant language, leading to the conclusion that the input exposure and the dominant/nondominant dichotomy play a significant role in establishing whether bilingual children lag behind their monolingual counterparts.

Another possible explanation for the differences reported in the literature is the relative difficulty of the target structure. The majority of research on the accuracy of grammatical development has focused on earlier phases of grammatical development such as the acquisition of past tense (Paradis, Genesee & Crago, 2011), the acquisition of mass/count nouns (Gathercole, 2000a) or the acquisition of grammatical gender (Gathercole, 2000b). Wiechmann, Steinfield and Kerz (2013) bring evidence to this debate by arguing that 5 year old bilinguals have not caught up with their monolingual
counterparts in the domain of complex sentences, which constitutes the last milestone in the acquisition of grammar (Clahsen, 1986).

Also, the structural similarities and differences between the languages under examination may have an effect on the strength of particular cues and thus result in differences in performance between the participants (MacWhinney, 1997). For example, the use of overt subjects in English might pose problems for children whose first language is Romanian, which is a null subject language. Although no studies to date have been carried out with bilingual Romanian-English participants, previous studies with Spanish (also a null subject language) and English bilinguals have showed the tendency of Spanish speakers to omit subjects in their written performance in English (Phinney, 1987). However, Yip & Matthews (2000) have observed such cross linguistic influences only in the language that is dominant at the time of examination, pointing back to the importance of dominant/weak language differentiation.

In summary, many studies have shown that bilingual children lag behind the monolingual children in morphosyntactic development. However, whether they lag behind regardless of the grammatical structure is still unclear. In addition, the question of whether this difference persists when the children are examined in their dominant language remains, given the lack of absolutely defining research. Finally, existing research has not been clear in determining whether the differences identified manifest only in the initial stages of language acquisition or whether they disappear as the children progress in their language learning. Further research is needed to address these questions and find clear answers. Despite the conflicting findings, it is commonly accepted that the degree of exposure to the two languages as well as the complexity of the language structure under analysis determine the rates of bilingual morphosyntactic development.

2.5.4.1. Romanian Morphosyntax

At the morphosyntax level, unlike English, Romanian has maintained its rich inflectional characteristic and is, thus, governed by nominal agreement. This means that the way we form different modifiers such as adjectives, numerals, and pronominal adjectives depends on gender and number of the noun they accompany. Romanian is the only Romance language that has preserved three genders from Latin: masculine,
feminine, and neuter. Moreover, the plural of nouns is formed by changing the ending of the noun through adding or substituting and, sometimes by changing the vowel or consonant in the stem as well. Also, the usual word order in sentences is SVO, just like in English. However, unlike English, Romanian is less restrictive offering relatively more freedom in word order, allowing for combinations like VO, OSV, and SOV - all considered grammatically correct. Given the particulars of the Romanian and English morphosyntax, it is expected that some language transfer occurs when the Romanian children apply the less restrictive rules when learning English, particularly at the beginning of their L2 studies.

2.5.5 Discourse Skills of Bilingual Children

Narrative skills, as part of discourse skills, along with vocabulary knowledge, have been found to be important precursors to literacy for both monolingual and bilingual children (August, Carlo, Dressler & Snow, 2005; Pearson, 2002). In addition, narratives are an academic discourse genre that has been linked to success in school, particularly in the preschool years (Miller et al., 2006; Tabors, Snow & Dickinson, 2001).

The use of narratives provides a rich source of data that documents children’s language use in a naturalistic context. The narratives offer a number of advantages for the study of bilingualism and discourse skills. For one, they allow inquiry into a multitude of linguistics issues in one task, including, lexicon, morphosyntax, phonology, discourse structure and fluency (Iluz-Cohen & Walters, 2012). In addition, they allow us to assess parallel measures across languages not susceptible to the disadvantages of standardized tests in order to get cross-language comparison and to prevent misrepresentation of the children’s knowledge that is often associated with standardized tests (Peets & Bialysotok, 2013; Simon-Cereijido & Gutierrez-Clellen, 2009). Finally, narratives are a perfect contender for spontaneously eliciting phenomena that are specific to bilingual performance, i.e. code-switching (Iluz-Cohen & Walters, 2012).

One question that has interested researchers in the field is whether story telling skills in bilingual children are language specific and thus less transferable or if they are invariant across a bilingual child’s two languages. In an attempt to address this question, Pearson (2002) conducted a study with English-Spanish bilingual children from grades 2
to 5 and English monolingual children. Results suggest overall better performance in English than Spanish, with overall higher narrative scores than language scores, monolingual-bilingual differences for vocabulary but not for narrative skills, and bilingual-monolingual similarities for complex syntax but not for vocabulary and morphosyntax, areas in which the monolinguals outperformed the bilinguals. The researcher concluded that whereas the children are able to transfer story elements and complex syntax from one language to another there is little to no transfer regarding vocabulary and morphosyntax.

Fiestas and Pena (2004) also examined whether oral language skills and narrative skills are “distinct”. They found that the bilingual preschoolers told stories of equal length and complexity in both languages. However, the study reports more initiating events and attempts emerging in Spanish and more consequences in the English narratives. The authors conclude that the amount of information in a narrative is an “interrelated skill in both languages” (p.163).

Uccelli and Paez (2007) examined the performance of Spanish-English bilingual children on a picture-elicitation task and found a relationship between Spanish vocabulary at the age of 4 and Spanish story quality at the age of 6. The researchers also found that kindergarten Spanish narrative performance predicted first-grade English narrative, which means that there may be a cross-linguistic transfer at the discourse level. However, as pointed out by Peets and Bialystok (2013), none of these studies matched the bilingual children with monolingual counterparts in order to compare and draw developmental pictures on how the two groups differ. To address this shortcoming, Peets and Bialystoc (2013) conducted a study with preschool bilingual children and analyzed their performance on standardized measures of language proficiency (PPVT-III for vocabulary, Wug Test for morphology and formulated sentences task of the Clinical Evaluation of Language Fundamentals for productive syntax) as well as two discourse forms: narratives and explanations. Their performance on all tasks was compared with the performance of their monolingual counterparts matched for age and grade. The researchers found that the bilingual children performed poorer on the standardized measures of language proficiency but equally well in the discourse-based linguistic and genre features. The findings underline the limited ability of present day standardized tests
to capture the full range of language knowledge of bilingual children, on the one hand, and the fact that young bilingual children may not be at risk of academic difficulties that might otherwise have been suggested by the standardized assessment of these children. A broader interpretation of the findings is that bilingual children seem to have the ability to compensate for disadvantages in the linguistic repertoire that they possess, suggesting that “bilinguals may be efficient and goal driven language learners who are effectively doing ‘more with less’.” (Peets & Byalikost, p. 16)

2.5.5.1 Romanian Discourse Skills

No study to date has been conducted with bilingual Romanian-English children to analyze their performance on story telling tasks. There is, however, one study that investigated the narrative development of Romanian monolingual preschoolers, aged 4 to 6 (Buja, 2008). The researcher found that the youngest children in the study (age 4) produced narratives that were more picture-descriptions rather than coherent stories. The older preschoolers (age 5) produced more developed narratives that had plot development and the events were narrated in sequence and marked for causality as well. The schoolchildren (age 6) segmented their narratives into episodes building narratives that had a hierarchical organization. The findings suggest that the narrative skills as well as the linguistic forms employed increase with age. The present study fills in the gap by documenting the development of narrative skills of bilingual Romanian-English preschoolers and it is expected that the children will follow the same developmental patterns as found in the monolingual Romanian children stated in Buja’s study.

2.6 Code-switching and Code-mixing

Code-switching, the alternate use of languages between sentences and phrases, and code-mixing, the use of two languages in a single sentence are natural and unique occurrences for bilingual children. Early work on code-mixing has pointed out this phenomenon as being a sign of language deficiency, inadequacy or even language attrition (Cheng & Buttler, 1989; Poplack, 1980). However, more recent work underlines that code-switching is a natural occurrence and that bilingual children revert to this strategy to express themselves more fully and effectively (Genessee, Paradis & Crago
One factor involved in the degree of code-switching by bilingual children is the input. Several studies have looked at the relationship between the children’s code-switching and input and found that there is a close relationship between the rates of code-mixing by adults and children, and that the mixing is more common in the weaker language and less common in the dominant language (Comeau, Genesee & Lapaquette, 2003; Yiu, 2005). Given that the children’s Romanian in this study is considered dominant at least at the beginning of the preschool years, it is expected that, if any, there will be more code mixing in English and less in Romanian.

Another factor in the development of code-mixing involves the discourse strategies employed by the children’s parents and caregivers. Lanza (1997; 2004) identified five parental discourse strategies: Minimal Grasp strategy, Expressed Guessed strategy, Repetition, Move on strategy and Code Switch. The use of these strategies depends on the views societies and parents have on code-switching. For example, Lanza (2004) found that the Norwegian-English families she studied used mainly the first three strategies which questions or corrects the child’s code-switching and which are the most monolingual strategies of the five. In contrast, the Cantonese-English families studied by Lanza (2004) prefer the move-on strategy most often because such code-switching is widespread and commonly accepted within the Cantonese speaking society.

A different line of research addresses the issue of code-switching and minority language loss. In a longitudinal study, Kaufman and Aronoff (1991) followed a preschool aged sequential bilingual child whose first language was Hebrew. After being exposed to English in school, the child began to code-switch and ultimately refused to speak Hebrew. As his code-switching increased, his syntactical errors in L1 increased as well. This led the researchers to believe that the child started to lose his L1. In another longitudinal study, Brice and Anderson (1999) documented the code-switching and language loss in a Spanish sequential bilingual preschool child and found that 10% of the child utterances contained code-switching. However, the researcher did not link this to language loss. In a study with Spanish – English children who spoke Spanish at home, Hammer, Lawrence and Miccio (2008) documented code-mixing behavior before and after the children started school in English and found that the children code-switched more when they were using Spanish and less when they were using English. The
researchers concluded that the behavior was a sign of increasing language abilities in
English but did not explore the issue of language loss for Spanish. Given the incomplete
and often contradictory findings, and the importance of preserving bilingual children’s
L1, further research is needed to explore the relationship between code-switching and
minority language loss.

2.7 Rationale of the present study

Although there has been a lot of research done in recent years on minority
language development and maintenance, it remains unclear what factors lead to
successful maintenance and harmonious development. The majority of studies have
focused on school aged children or adolescents (Chumak-Horbatsch, 2008; Li & Zhu,
2006), with the main interest being to evaluate language learning as it relates to school
performance, thus overlooking the minority language and the “pattern of living experienced
by the individual” (p 10) which takes place across different contexts (Oller & Pearson, 2002).

The purpose of this study is to document the language development of Canadian-
born Romanian-speaking children with a focus on their home language development.
There is no known published work that examines the language development of Canadian-
born Romanian-speaking preschool children within a Canadian context. Therefore, the
present study adds to this body of literature by documenting the bilingual development
and bicultural experiences of Romanian-speaking Canadian children from the ages of
approximately 4:0 to 6:0 years.

Given the genetic relationship between languages under examination in this study,
as well as the existence of the conditions that support and encourage maintenance of
minority language, it is expected that: (1) the children will continue to develop their
home language during the preschool years, (2) the children will catch up with their
monolingual counterparts in terms of English language development, (3) the children’s
knowledge of Romanian will facilitate the acquisition of English, and (4) the cross-
linguistic influence experienced by the children will be bidirectional in all domains of the
two languages.

The next chapter will present an overview of the research questions asked in this
study and the method used to address them.
Chapter 3: Method

The design and method of the present study is geared to answer the following research questions:

1. What is the impact of majority language exposure on minority language skills?
   a) Will children continue to develop their home language after they start Kindergarten in English if supportive conditions are in place (e.g., positive attitudes towards both L1 and L2, rich and meaningful L1 input, commitment to L1 maintenance, and later L2 immersion)?
   b) Where the introduction of English impacts the heritage language, which aspects of the children’s heritage language are affected the most by their introduction to English: vocabulary, morphosyntax, and phonology? Are their discourse/pragmatic skills affected as well?

2. a) In order to examine the children’s L2 English development, as outlined in the previous chapter, how do the children perform on two English language standardized tests (PPVT and CTOPP) compared with their English native speaker counterparts at the end of the preschool years?
   b) In what ways does Romanian influence the children’s English, as revealed in the English vocabulary test and the elicited narratives?

In order to address the above questions, data were collected longitudinally over a period of two years from three Romanian-speaking Canadian-born children. To determine the children’s language input and use patterns as well as their families’ attitudes towards language and commitment to L1 maintenance, a structured interview format was used with the parents. The children’s knowledge of the minority language was assessed using two newly developed instruments (Romanian-adapted PPVT-4 and Romanian-adapted CTOPP) as well as through narratives and monthly recordings. The children’s knowledge of the majority language was evaluated using two standardized measures (PPVT-4 and CTOPP) as well as narratives.
3.1 Participants

The participants in this longitudinal study are three children born in the year 2006 in Canada and whose first and dominant home language is Romanian. The children had not attended any daycare or program that was run in a language other than Romanian at the start of the study in September 2010. The decision to select children who had been almost entirely exposed to their heritage language until the age of four was motivated by findings from previous research which highlight the fact that early exposure to English (e.g. at home) can lead to a rapid shift from the mother tongue to English (Hakuta & D’Andrea, 1992). (Note that in all three cases, the parents in question had made a conscious decision to raise their children in this fashion.) In addition, a large number of child language acquisition studies established that by the age of 4 the basic foundations of the native language are in place and stable. In other words, before they begin school and receive formal instruction in kindergarten, children master the basic functions of their native language including its phonology, morphology, syntax and some aspects of pragmatics and sociolinguistic conventions (Guasti, 2002; Lightbown & Spada, 2014; O’Grady 1997; Rothweiler, 2006; Snyder, 2007). However, it should be born in mind, that the language remains vulnerable if the input in the minority language reduces due to the introduction of the majority language. Since I was interested in determining how the Romanian language develops between the ages of approximately 4 (when the children have not yet been schooled in a language other than Romanian) and 6 (when the children will have attended both Junior and Senior Kindergarten in English), it was important for the participants to be approximately 4 years old at the starting date of this project (3;11-4;2) years old and at the end date approximately (5;11 - 6;2) years old.

The small number of participants allowed me to analyze in more depth the issue of language retention by bilingual children. Two of the three participants were boys and will be named for the purposes of the study “Dan” and “Radu”, and one participant was a girl named “Moni”. All of the participants were first-born children. None of them had any siblings at the commencement of the study; however, one child (Radu) ended up with a baby brother shortly after the study started.
3.2 Instruments

The children were recruited through an information flyer posted on a well-known and established Romanian forum in Canada. Only families in which both parents spoke Romanian as the native language and whose child had been exposed mainly to Romanian were considered for this study. The initial contact with the families was established by phone. When the parents expressed their interest in participating in the study, a home visit was scheduled.

3.2.1 Interview

The children’s parents were asked to participate in a structured interview with open-ended questions at the beginning of the study (see Appendix B). The purpose of the interview was twofold. In the first part, parents were asked to provide demographic information about themselves as well as their child. In the second part, parents provided information about home language practices and policies, and attitudes towards the home language and English. The interview also provided details about the extent of children’s use of Romanian and English, and allowed me to further explore the parents’ attitudes towards minority language retention, and their efforts to help the children maintain Romanian as their heritage language. The same questions were asked of all parents using Romanian only. The interviews took place in the children’s homes and the questions were asked in the same order with all three families. Parents were allowed to answer in the language of their choice, either Romanian or English. Their answers were audio recorded and transcribed for qualitative analysis.

3.2.2 Two English Language Tests

3.2.2.1 Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4), Form A and Form B (Dunn & Dunn, 2007)

The measure used to assess the children’s receptive vocabulary knowledge of English was the Peabody Vocabulary Test, Fourth Edition (Dunn & Dunn, 2007) which has two forms, Form A and Form B. In order to avoid word recognition through repeated exposure to the instrument both forms were used alternately. The test was administered at five points over two years: at the beginning of the study in September 2010 (Time 1 -
Form B), then in March 2011 (Time 2 - Form A), followed in September 2011 (Time 3 - Form B), then again in March 2012 (Time 4 - Form A), and concluded in September 2012 (Time 5 - Form B). Every form contains 228 items each consisting of four coloured pictures as response options on a page. For each item, the examiner says a word and the child answers by selecting the picture that best illustrates the meaning of the word. The 228 items in each form are split into 17 sets with 12 items each. The task took approximately 20 to 30 minutes to administer individually to each child.

3.2.2.2 Comprehensive Test of Phonological Processing (CTOPP) – (Wagner, Torgesen, & Rashotte, 1999)

The Comprehensive Test of Phonological Processing (CTOPP) was used to measure the children’s phonological processing skills in English. The CTOPP assesses phonological awareness, phonological memory and rapid naming. Deficits in any of these areas have been linked to reading difficulties (Perfetti, Beck, Bell, & Hughes, 1987; Vellutino, Fletcher, Snowling, & Scanlon, 2004). The version used for this study, designed for individuals who are 5 to 6 years old, consists of seven core subtests and one supplemental subtest. The test produces three core composite scores: a) phonological awareness, comprised of Elision, Blending Words and Sound Matching; b) phonological memory, consisting of Memory for Digits and Nonword Repetition; and c) rapid naming, consisting of Rapid Colour Naming, and Rapid Object Naming. The supplemental subtest consists of Blending Nonwords, which is identical with the Blending Words subtest except that the items are nonwords rather than real words. Table 1 describes each subtest and their functions.
Table 1

**CTOPP – Subtests and their functions**

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Elision</td>
<td>20 items; measures the ability of a child to remove designated sounds from a word to for another word.</td>
</tr>
<tr>
<td>Rapid Colour Naming</td>
<td>36 items in two separate forms (Form A and Form B); measures the speed with which a child can name the colours that appear in a string of different coloured blocks.</td>
</tr>
<tr>
<td>Blending Words</td>
<td>20 items; measures a child’s ability to blend sounds in order to form words.</td>
</tr>
<tr>
<td>Sound Matching</td>
<td>20 items; measures the ability of a child to select words that have the same initial or final sound.</td>
</tr>
<tr>
<td>Rapid Object Naming</td>
<td>36 items on two separate forms (Form A and Form B); measures the speed with which a child can say the objects that appear in a series of objects.</td>
</tr>
<tr>
<td>Memory for Digits</td>
<td>21 items; measures the ability of a child to accurately repeat numbers ranging from 2 digits to 8 digits in length.</td>
</tr>
<tr>
<td>Nonword Repetition</td>
<td>18 items; measures a child’s ability to repeat nonword items.</td>
</tr>
<tr>
<td>Blending Nonwords</td>
<td>18 items; measures a child’s ability to combine sounds in order to form nonwords.</td>
</tr>
</tbody>
</table>

The test was administered at the end of the study at Time 5 when the children were six years old. The CTOPP was individually administered and took between 20 to 30 minutes of testing time per child.
3.2.3 Romanian Versions of Language Tests

There are no standardized tests for Romanian-speaking children that could assess their language performance in Romanian. Therefore, the two standardized English tests mentioned in the above section, the PPVT-4 and the CTOPP, were adapted to Romanian in order to assess the children’s Romanian receptive lexical knowledge and phonological processing skills.

3.2.3.1 Romanian-adapted Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4), Form A and Form B

The Peabody Vocabulary Test, Fourth Edition (Dunn & Dunn, 2007) was adapted to Romanian and used as a measure of Romanian receptive vocabulary knowledge at five points that coincided with the times when the English data were collected: at the beginning of the study in September 2010 (Time 1 - Form B), then in March 2011 (Time 2 - Form A), followed in September 2011 (Time 3 - Form B), then again in March 2012 (Time 4 - Form A) and concluded in September 2012 (Time 5 - Form B). Both forms were adapted to Romanian for use in the study. The structure of the original test was maintained with each Romanian-adapted version containing 228 items that were split into 19 sets with 12 items each. The English stimuli were translated into Romanian as accurately as possible, with the help of reputable dictionaries (Bantas, 1994; Levitchi, 2005) as well as a native speaker of Romanian, whose judgments were confirmed by other native Romanian speakers. There were minimal differences in judgments, and where these differences existed, they were resolved with discussion. It needs to be mentioned that one of the native speakers of Romanian who was consulted is a linguist by profession and therefore deemed to have contributed professional and reliable information to the creation of the Romanian-adapted PPVT-4.

The Romanian-translated items closely match the English ones with respect to word frequency, grammatical category and cultural bias. Since there is no established word frequency list for the Romanian lexicon, the words were translated into Romanian so that they would belong to approximately the same frequency band as their English equivalents, a judgment made by two native speakers of Romanian. For example, the
English word “gigantic” which is in the 6000 BNC word level was translated as “gigantic” in Romanian rather than by “urias” or “mare” which mean the same as gigantic but are more frequent in the language and would most likely be in the same frequency band with their English equivalents “huge” (2000 BNC) or “big” (1000BNC). In addition, each Romanian equivalent item belongs to the same word category as its English counterpart did. For example, if the English word was an action word, so was its Romanian-adapted counterpart. The same stands for the nouns or noun phrases as well as the adjectives that form the other two word categories tested in the English version of the PPVT-4. Moreover, the items translated into Romanian were controlled for culturally-biased items in order to make the test items as authentic as possible. Culturally-biased items from the English PPVT-4 were replaced by words that are more familiar to monolingual Romanian children in a typical Romanian-speaking home. For example, the English version contains items of pastries that are not commonly found in Romanian bakeries. Thus, item no. 15 from Form A (target word cookie) and item 32 from Form B (target word muffin) were replaced by pictures and names of pastries that are encountered more frequently by Romanian children, for example “cozonac” (sweetbread), a very popular pastry in Romania, and “biscuite” (biscuit), another very common Romanian pastry.

3.2.3.2 Romanian-adapted Comprehensive Test of Phonological Processing (CTOPP)

The Comprehensive Test of Phonological Processing (CTOPP) was adapted to the Romanian language and was used to measure the children’s phonological processing skills in Romanian. The adapted version closely matches the English version by maintaining the same organizational structure with seven core subtests and one supplemental test. Similarly with the English version, the Romanian-adapted version produces three core scores: a) phonological awareness, comprised of Elision, Blending Words and Sound Matching; b) phonological memory, consisting of Memory for Digits and Nonword Repetition; and c) rapid naming, consisting of Rapid Colour Naming, and Rapid Object Naming. The test also contains a supplemental subtest, Blending Nonwords, which is identical with the Blending Words subtest except that the items are nonwords rather than real words. All the subtests were developed taking into account the
particulars and distinct characteristics of the Romanian phonology (Chitoran, 2001). An important remark is that all tasks and stimuli were developed in conjunction with two linguists, one of whom I a native speaker of Romanian and one is an English linguist. Furthermore, all tasks and stimuli were developed in conjunction with native Romanian-speaking informants. The remaining section offers a detailed description of the particulars of each subtest.

*Elision* – the subtest consists of 20 items that measure the children’s ability to drop a phonological segment from a word and pronounce the remaining portion. The subtest also contains six practice items. For example, the child is asked to say the word “televizor” (*television*) without saying /tele/. The correct answer is “vizor” (*peephole*). The first four test items are compound words, and the children are asked to listen to the item and say the word that remains after dropping one of the compounds. For the remaining 16 items, the children are asked to listen to a word and say the remaining word after dropping a specific sound. For example, the child is asked to say the word “bani” (*money*) without saying the sound /b/. The correct answer is “ani” (*years*). The task includes one- to three- syllable words and the place and type of sound/word that needed to be removed has been preserved from the English version of the test. Also, all syllable types that appear in the English version have been preserved for the Romanian version with the exception of those that have very low frequency in Romanian. Thus, two syllable types were replaced in the Romanian version. For example, the syllable type *cccvcc* (*split*) has only a 1% frequency in Romanian (Dinu & Dinu, 2006) and this made it impossible to find an item that would allow for the removal of a specific sound and obtaining a word with a meaning in Romanian. Therefore, this syllable type was replaced with the *ccvccv* (“brazi”- *Christmas tree*) that has a 2% frequency in the language (Dinu & Dinu, 2006) and allowed for dropping a specific sound and obtaining a word with a meaning. Also, a very small number (less than 1%) of three-consonant coda clusters are allowed in one syllable word final position in Romanian (Chitoran, 2001; Dinu & Dinu, 2006), this being the reason why the syllable type *cvccv* was replaced with *cvccc*, which has a 10% frequency in Romanian and allowed for another real word after sound manipulation.

*Rapid Colour Naming* – The subtest contains 72 items and measures the speed with which an individual can name the colours that appear randomly in a series of
.coloured ovals. The names of the colours were translated in Romanian, preserving the same order with the English version. An important observation is that the colour words in Romanian contain a different number of syllables compared to their English counterparts. Thus, except for the word yellow which has a Romanian equivalent word with two syllables as well (“galben”), the rest of the Romanian words have either two or three syllables, unlike the English equivalents that have just one syllable. This is an important observation since the scoring of the answers is time based and the length of the words affects the total score.

**Blending Words** – The subtest consists of 20 items and measures an individual’s ability to combine sounds to form words. The children listen to separate sounds and then they are asked to put the sounds together to make a whole word. For example, the children would be asked, “What word do these sounds make: n-u?” The correct answer is “nu” (no). The test contains one-to five-syllable words following as closely as possible the English version but taking into account the specificities of the Romanian language with regard to syllable type and its occurrence/frequency in the language.

**Sound Matching** – The subtest contains 20 items and measures the children’s ability to match sounds. The first 10 items ask the children to point to the picture that corresponds to the word that starts with the same sound as the first word the examiner said. The child also hears the picture words. For the last 10 items, the same procedure is used except that the children are asked to point to the picture of the word that ends with the same sound as the word pronounced by the examiner. All items are one-syllable items, similarly to the English version, and refer to objects known to young children.

**Rapid Object Naming** – The subtest contains 72 items and measures the speed with which an individual can name a series of objects that appear on two pages. The English words were translated into Romanian and varied from one- to two-syllable words. An important point is that three of the Romanian translations were one syllable longer than the corresponding English words which impacted the total time-based score.

**Memory for digits** – The subtest consists of 21 items and measures an individual’s ability to repeat a series of digits ranging in length from two to eight digits. The series of digits are identical with the ones in the English version.
Nonword repetition – The subtest consists of 18 items and measures an individual’s ability to repeat nonwords. The task includes one-to seven- syllable nonwords and the syllables range in length from one to four sounds. A variety of syllable shapes was included at each syllable length, with the most common syllable types found in Romanian (Dinu & Dinu, 2006). No syllable carried any lexical meaning in Romanian. Words were presented from shortest to longest syllable length.

Blending nonwords – the subtest consists of 18 items and measures an individual’s ability to combine sounds to make nonwords. The child is asked to listen to a series of separate sounds and then is asked to put them together to form a nonword. For example, the child is asked, “What made-up word do these sounds make: bi-ji-dol?” The correct answer is “bijidol”.

3.2.4 Story-telling Tasks

In addition to the above mentioned tests, the children’s knowledge of both Romanian and English was further tested with the help of a set of picture stories from the series Frog, Where Are You? by Mayer (1969). The five books used in this study are: Frog, Where Are You? (Mayer, 1969), Frog On His Own (Mayer, 1973), A Boy, A Dog And A Friend (Mayer, 1967), Frog Goes to Dinner (Mayer, 1974), and One Frog Too Many (Mayer & Mayer, 1975). With the exception of the narrative Frog Where Are You? which was only administered at the beginning of the study in Romanian only (Time 1), the rest of the narratives were elicited in both Romanian and English at four points in time every six months starting with March 2011 (Time 2) and ending in September 2012 (Time 5). A total of 27 narratives were elicited. Table 2 provides information about the characteristics of each book used in this study.
### Table 2

**Main characteristics of the book sets**

<table>
<thead>
<tr>
<th>Story</th>
<th>Setting</th>
<th>No. of Characters</th>
<th>No. of Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frog, Where Are You?</td>
<td>Forest</td>
<td>3 main protagonists (a boy, a dog and a frog); 5 secondary ones.</td>
<td>29</td>
</tr>
<tr>
<td>A Boy, A Dog and A Frog</td>
<td>Forest</td>
<td>3 main protagonists (a boy, a dog and a frog); no secondary protagonists.</td>
<td>29</td>
</tr>
<tr>
<td>One Frog Too Many</td>
<td>Forest</td>
<td>3 main protagonists (a boy, a dog and a frog); 2 secondary ones.</td>
<td>28</td>
</tr>
<tr>
<td>Frog Goes to Dinner</td>
<td>Restaurant</td>
<td>3 main protagonists (a boy, a dog and a frog); 7 secondary ones.</td>
<td>30</td>
</tr>
<tr>
<td>Frog on His Own</td>
<td>Park</td>
<td>3 main protagonists (a boy, a dog and a frog); 9 secondary ones.</td>
<td>30</td>
</tr>
</tbody>
</table>

To prevent an order effect due to eliciting the same stories in both Romanian and English, the data in each language were collected two weeks apart during different sessions with an alternation of the language sequence used to elicit the stories at each round of data collection. The children were shown the book from page one and asked to tell the story while looking at the pictures. Where they needed help and prompts, they were asked open-ended questions like “What do you see in the picture? What is happening in the picture?” rather than Yes/No questions that would not have elicited enough detailed information. If the answers were not detailed enough but rather one word answers, the child was encouraged to provide details by being asked: “Can you tell me more? “or “What else do you see in the picture?”. Repeating the child’s previous
utterances as well as using short phrases and words such as: “yes” and “go on” were techniques used throughout the entire elicitation procedure to encourage the child to continue and to demonstrate active listening. The Romanian equivalents of these prompts were used when eliciting the Romanian narratives. The narratives were audio recorded using a Sony digital recorder.

The reason why this story series was chosen for the current study was that it contains the same informational content for all ages (Berman & Slobin, 1994). For example, the book *Frog, Where Are You?* contains 29 images and represents a typical story with a protagonist (a little boy), an initial event (when the boy’s frog runs away) that determines the following events (with the boy and his dog looking for the frog), and a happy ending (with the frog being found). The other books in the series have the same main protagonists but different events. Given the similarities between the books (the same author, the same main protagonists, comparable initial and subsequent events), and considering that one of the purposes of the study was to investigate the development of Romanian over time, all picture books were deemed to yield data that could be subject to objective comparison.

In addition, an advantage of using picture books with bilingual children to elicit language is the reduced cognitive load imposed by the task by asking them to look at prompts and produce a story rather than imagine events and then produce a story (Berman, 1995). The books from the Frog series have been widely used by researchers working with bilingual and trilingual children (Berman & Slobin, 1994; Cenoz, 2001; Kellerman, 2001; O’Neill, Pearce & Pick, 2004; Pearson, 2002; Ucelli & Paez, 2007; Verhoeven & Stromqvist, 2001) precisely for the reasons mentioned above. Other advantages of using Mayer's (1969) books for elicitation purposes include established elicitation procedures, analytical frameworks, and availability of monolingual corpora in a variety of languages (Bamberg, 1987; Berman & Slobin, 1994; MacWhinney, 2000 - CHILDES: Child Language Data Exchange System; Miller & Chapman, 2000 – SALT: Language Sample Analysis).
3.2.5 Free Conversation Recordings

The parents of the participants were asked to record their children for approximately one hour every month for the duration of the study, starting in September 2010 and ending in September 2012. They had been given an audio recorder to tape their children in various naturalistic situations like conversations between the child and his/her parents, friends, grandparents, at lunch time, dinner time, while doing homework or during various learning activities. The parents were the ones who decided which was the most appropriate time to record their child. At the end of each month, I met with the children’s parents and collected the recordings.

3.3 Procedures

The project started in September 2010 and ended in September 2012. Prior to beginning the project, ethics approval was obtained from the University of Toronto. Parents and children were recruited following a call for participants placed on Romanian-Canadian websites (Appendix C). Letters of explanation about the study and consent forms (Appendix D) were given to those parents who answered the call for participants. I met with the parents who expressed an interest in participating in the study and I discussed the letter of consent with them to make sure they understood the purpose of the study and what it entailed. Parents of three children signed the consent forms allowing their child to participate in the study. At the beginning of the study, the parents participated in an interview with open-ended questions about their own and their children’s language practices and the attitudes towards maintaining their heritage language. Starting with September 2010, the children performed various language tasks meant to assess their knowledge of both Romanian and English every 6 months (see Appendix E for a complete schedule). The times of collecting the data will be named from here on T1, T2, T3, T4, and T5.

3.4 Data Preparation

Three main data sets were prepared for the various analyses carried out in this study. The first set of data represents a qualitative analysis of the parents’ interviews and provides detailed information on the children’s linguistic environment, as well as the
parents’ attitudes towards heritage language maintenance. The second set of data includes the results of the English standardized tests (PPVT-4 and CTOPP) as well as their Romanian adapted versions. Finally, the third data set contains the analysis of the elicited narratives in both Romanian and English. In addition, the monthly conversation recordings done by the parents were analysed qualitatively for further information on the children’s linguistic environment and their ability to use the appropriate linguistic means. The elicited narratives have been transcribed for a qualitative and quantitative analysis using SALT - Systematic Analysis of Language Transcripts. The software includes a transcription editor, standard reports and reference databases for age-based comparisons.

3.4.1 PPVT– English and the Romanian-Adapted Version

In order to document the development of the English and Romanian receptive vocabulary knowledge, the raw scores for the Romanian-adapted PPVT-4 were obtained at all five points in time, as well as the raw scores and the percentile for the English PPVT-4 at the same points in time.

In order to investigate different patterns of responses for the English PPVT-4 and its Romanian-adapted version, all words from the first 16 sets (set 16 was the Ceiling set) were categorized using two conceptual models: cognate/non cognate and home/academic categories. An important point is that the analysis of receptive vocabulary knowledge in terms of these two conceptual frameworks was run for each child at T1 at the beginning of the study, as well as at T5 at the end of the study. Thus, only Form B of the PPVT-4 was prepared for the two analyses as this was the form used at the two points of data collection. The decision to run the analysis only at the beginning of the study and at the end and not at every data collection round was based on the fact that the items in each category of the two models were not sufficient to capture the development of the language in a consistent manner over short periods of time.

Thus, for the first conceptual model, each English word of the PPVT-4 (Form B) was rated as being home or academic, based on the work of Bialystok, Luk, Peets, and Yang (2010). Their work has used criteria to determine whether a word belongs to the home category or whether it is more likely to be encountered in an academic medium. Since the bilingual children in this study used Romanian at home and English at school, it
is possible that these categories will show differences in certain portions of the children’s bilingual vocabularies. Thus, expanding on the criteria used by Bialystok et al. (2010), criteria for including items in the home category are: commonly experienced food and household items (e.g. banana, lamp), culture-specific items (e.g. muffin, canoe, camper, etc.), frequently used clothing (e.g. shoe), household pets (e.g. dog, cat), playing or other frequent physical activities (e.g. jumping, catching, peeking), high frequency or high impact basic body parts (e.g. mouth, knee), common colours (e.g. red) and words that are unlikely to appear in an academic context (e.g. horrified). Criteria for including the items in the academic category included: professions (carpenter, dentist), animals or plants (reptile, hyena, cactus), shapes (e.g. rectangle, diamond), musical instruments (violin, clarinet), low frequency body parts (e.g. sternum, pelvis), geographic locations (e.g. peninsula) and words reflecting school experiences (e.g. enumerating, composing). Appendix F lists all the criteria used for classifying items into “home” and “academic” items. The categories are relative and the lexical items might overlap to a certain extent but differences in performance between the two categories might help understand children’s knowledge of receptive vocabulary and how it develops over time. Using the criteria mentioned above, two people independently classified all of the items from sets 1-16 for both forms. The inter-rater raw agreement was 97.92% and chance corrected agreement using Cohen’s Kappa was .92 which would also be interpreted as very good inter-rater reliability. Consensus was reached on all disagreements and each word in the test was classified as either a “home” item (total of 38 items) or “academic” item (total of 155 items).

Because an item frequency factor in each category was of concern, with low frequency items ending up being assigned to the “academic” category and the high frequency items being potentially assigned to the “home” category, the frequency level for each item was established using the the British National and Lextutor corpora (www.lextutor.ca). The items in the “home” category ranged from level 1,000 to 8,000 frequency band, while those in the “academic” category ranged between 1,000 and 17,000. Within the “academic” category, 80% of the items were in the 1,000 to 8,000 frequency band while 20% of the items were in the 9,000 to 17,000 frequency band. Although it is obvious that the frequency was not a clear and determining factor of the
classification, to eliminate any possible effect related to frequency, only those items with a frequency between 1,000 and 8,000 level for each of the two categories were included in the analysis.

In addition to being classified as a “home” or “academic” lexical item, each English word from the PPVT-4 (Form B) was rated as being a cognate or a non-cognate. Cognates are lexical items that have similar orthographic-phonological forms across two languages and are related semantically. When bilinguals encounter a cognate, cognate facilitation is said to be present. Furthermore, if the bilinguals’ L1 is genetically related to L2, the advantage is further evident (Helms-Park & Dronjic, 2012; Petrescu, Helms-Park & Dronjic, 2009; Schmitt, Schmitt & Clapham, 2001). Since the bilingual children in this study have Romanian as their L1, a language genetically related to English and therefore sharing many cognates with it, an investigation of the cognate facilitation hypothesis through an item analysis was conducted. Thus, two native speakers of Romanian independently classified the items into cognates and non-cognates. The amount of similarity between the phonological form of the English and Romanian equivalents was determined using the Crosslinguistic Overlap Scale for Phonology (COSP; Kohnert, Windsor & Miller, 2004). Based on this scale, each Romanian-English pair was assigned a value between 0 and 10, with 0 corresponding to a word pair that share no phonological commonalities and 10 corresponding to a complete phonological overlap between the Romanian-English cognates. The score was determined by four features: shared initial sound, shared number of syllables, shared consonants, and shared vowels (see Table 3). The maximum score for an item is 10.
Table 3
Crosslinguistic Overlap Scale for Phonology

<table>
<thead>
<tr>
<th>Feature overlap</th>
<th>Scoring</th>
<th>Example (from Romanian)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial sound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(0–3 points)</td>
<td>Scoring</td>
<td>Example (from Romanian)</td>
</tr>
<tr>
<td>3 = Same consonant</td>
<td>banana – banana</td>
<td></td>
</tr>
<tr>
<td>2 = Same vowel</td>
<td>injecteaza - injecting</td>
<td></td>
</tr>
<tr>
<td>1 = Similar sound</td>
<td>tunel – tunnel</td>
<td></td>
</tr>
<tr>
<td>(e.g., same sound class or one element of a consonant cluster)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 = Complete mismatch</td>
<td>cerebral – cerebral</td>
<td></td>
</tr>
<tr>
<td>initial sounds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of syllables</td>
<td>2 = Equal number of syllables</td>
<td>vehicol – vehicle</td>
</tr>
<tr>
<td>(0–2 points)</td>
<td>1 = Different by only 1 syllable</td>
<td>ferma – farm</td>
</tr>
<tr>
<td>0 = Different by more</td>
<td>florareasa – florist</td>
<td></td>
</tr>
<tr>
<td>than 1 syllable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consonants</td>
<td>3 = &gt;70% consonant overlap</td>
<td>sedan – sedan</td>
</tr>
<tr>
<td>(0–3 points)</td>
<td>2 = 50%–70% consonant overlap</td>
<td>atlet – athlete</td>
</tr>
<tr>
<td></td>
<td>1 = ≤50% consonant overlap</td>
<td>kiwi – kiwi</td>
</tr>
<tr>
<td></td>
<td>0 = No consonant overlap</td>
<td>N/A</td>
</tr>
<tr>
<td>Vowels</td>
<td>2 = ≥80% vowel overlap</td>
<td>harmonica – harmonica</td>
</tr>
<tr>
<td>(0–2 points)</td>
<td>1 = 50%–80% vowel overlap</td>
<td>lichid – liquid</td>
</tr>
<tr>
<td></td>
<td>0 = &lt; 50% or no vowel overlap</td>
<td>cerc – circle</td>
</tr>
</tbody>
</table>


As mentioned, because a cognate facilitation effect was tested only at the beginning of the study (T1) as well as at the end (T5), when Form B of the PPVT-4 was
used, only the items in Form B were assigned a COSP score. The items were prepared for
COSP coding by being phonetically transcribed. Based on Kelley and Kohnert (2012) a
number of methodological decisions were made in order to assign each item a COSP
code. For example, similarly to the above mentioned study, the consonants were
considered to be similar sounds (score 1 in the category of initial sound overlap) if they
shared at least one of the three features of place, manner, and voice, or at least one of the
same sounds as a consonant cluster. For example, the word “tuba” (tuba in Romanian)
would be given a score of 1 for the initial sound overlap instead of 3 because the
Romanian sound /t/ is a voiceless dental stop unlike its English equivalent which is a
voiceless alveolar stop. Scoring vowel sound overlapping had its own challenges since
Romanian has less vowel distinctions than English. Romanian has seven vowels /i, u, e, ə,
o, a, ɨ/. While the sound /ɨ/ is specific to Romanian only, the rest of the sounds exist in
English as well with differences that make them distinct enough to not entirely overlap
with their English counterparts. For example, while both Romanian and English have a
schwa in their phonetic inventories, the two are perceptually different. The English schwa
is shorter and more variable (Silverman, 2011), while the Romanian is more stable. The
Romanian schwa is a full vowel that can occur in stressed positions in a word. Other
differences between the two phonetic systems like a lack of a lax/tense distinction in
Romanian could cause a lack of phonological transfer from Romanian into English and
was taken into account when assigning a COSP score to the items.

The PPVT-4 contained the entire range of COSP scores, from 0 to 10.
Representative test item examples, their Romanian translations, and their COSP scores
include solo-solo, with a COSP score of 10; farm-ferma, with a COSP score of 6; and
bus-autobuz, with a COSP score of 1. The average COSP score on the PPVT-4 Form B
was 6.59 (SD=2.43). All items with scores from 0 to 5 were designated as cognates with
minimum phonological overlapping and those from 6 to 10 were classified as cognates
with significant phonological overlapping. The cognates with COSP scores between 0
and 5 were excluded from the analysis. This cutoff point was chosen based on empirical
evidence from Kohnert, Windsor & Miller (2004) who found that the majority of the
monolingual speaking adults correctly guess the English translation for 15% - 50% of
Spanish words with COSP scores from 6 to 9, but did not guess the English translation
for Spanish words with COSP scores lower than 5. The inter-rater raw agreement for Form B was 95.31 % and chance corrected agreement using Cohen’s Kappa was .90 which would be considered very good inter-rater reliability. Consensus was reached on all disagreements and all test items were classified as either cognate items (total of 80 items from sets 1-16) or non-cognate items (total of 112 items from sets 1-16). Of the 80 items that were designated as cognates, 23 items had the COSP score lower than or equal with 5 and were therefore eliminated from the present analysis.

3.4.2 Transcriptions and Coding of Narratives

The narratives were audio recorded using a Sony digital recorder and the files were transferred on a computer hard drive. A native Romanian speaker transcribed each recording using the Systematic Analysis of Language Transcripts Research Version 8 Software (Miller & Chapman, 2000). The transcripts were segmented into communication units (C-units). A C-unit is defined as the independent clause with its modifiers. The procedures for segmentation of C-units were slightly different from English to Romanian and followed the procedures offered by the software with regard to pro-drop languages. In English, the main clauses were segmented with their conjoined simple coordinate conjunctions (e.g. and, but) unless an overt subject or pronoun was used in the clause. In Romanian, main clauses were always segmented due to the pro-drop nature of Romanian. A second native speaker of Romanian and proficient speaker of English reviewed the recording independently to check for inconsistencies related to segmenting or judgements of the transcripts. If there were any disagreements, they were resolved by the two transcribers by listening to the recordings again and reaching consensus. Once transcribed, the narratives were coded for the following domains:

i) Narrative macrostructure, using the narrative scoring scheme (NSS) which is an index of a child’s ability to produce coherent narratives based on story grammar analysis (Stein & Glen, 1979). The measure consists of seven story characteristics: introduction, character development, mental states, referencing, conflict resolution, cohesion, and conclusion. Each category is scored holistically on a 0-5 point scale for a total of 35 points.
ii) Narrative *microstructure* as reflected in the language measures:

length/productivity (number of C-units, and number of total words in each story (NTW)),
lexicon, (number of different words (NDW) which is a measure of lexical diversity and has been used as an index of vocabulary knowledge in studies examining children’s oral narrative skills, as well as Type/Token ratio index); and morphosyntax knowledge (mean length of C-unit in words and Complexity Index – see Heilmann, Miller, Nockerts & Dunaway, 2010). Also, to measure the degree of crosslinguistic influence, a bilingualism score was obtained by counting the frequency and the proportion of code-switching.

A few remarks about the mean length of C-unit are necessary. The Mean Length of Utterance (MLU) measures the average number of morphemes that children use per utterance and is an index of general grammatical skills that increases with age throughout the school years, particularly when analyzed using narratives and expositories (Heilmann, Miller, Nockerts & Dunaway, 2010; Leadholm & Miller, 1992; Nippold, Hesketh, Duthie & Mansfield, 2005). However, a few methodological issues are encountered when used for other languages than English or when used to analyze language beyond a certain age. While procedures to count morphemes are fairly well established for English in both SALT and the literature, there are no references on how to proceed with languages that are highly inflected like Romanian. For example, Babyonyshev & Marin (2006) point out that in Romanian, words stems are not typically minimal well-formed words like in English (e.g. sleep – *dorm; frog – *broa) and even those that are minimal well-formed words often include more than just one morpheme (e.g. *cas+a* ‘the house’, *cas+a* ‘the house’, *cas*). Consequently, it is impossible to calculate the MLUm for Romanian without making arbitrary decisions about what constitutes a morpheme. This is in fact one of the strongest criticisms that has been attached to the measure even for English (Arlman-Rupp, Van Niekirk-de Hahn & Van de Sandt-Koenderman, 1976; Hickey 1991). To address this issue, the word-based MLU has been proposed in the literature as an equally effective and efficient measure of language development (Hickey, 1991; Parker & Brorson, 2005) that highly correlates with the MLUm. The MLUw has been theoretically preferable to MLUm because there are no ad hoc decisions that need to be made with regards to what can be counted as a morpheme. For this reason, for the present study, the MLUw was obtained for both languages and the MLUm was established only
for Romanian as a starting point for future studies and a point of reference in rapport with the Romanian MLUw.

Furthermore, despite the fact that MLUm and MLUw prove to be a useful preliminary index of early child language development, caution needs to be exercised when using this index even for English since after a certain age (usually after 4), the MLU loses its predictive nature of grammatical complexity (Hickey, 1991). Thus, the Syntactic Index (Scott & Stokes, 1995) has been instead proposed in place of MLU. The Syntactic Index (SI) is a measure of language development in children that indicates the average number of subordinate clauses produced per C-unit. It addresses the weaknesses in the MLU measurement and has been widely used in research on child language acquisition. MLUw and MLUm are used in this study as a preliminary measure that must not be over-interpreted for either language, given the nature of Romanian and the age of the children. In order to address these shortcomings, the Syntactic Index was also obtained along with the MLUw and MLUm.

To establish reliability, a second rater, native speaker of Romanian and proficient speaker of English, coded 10% of the narratives. Cronbach’s alpha intercoder reliability equaled .91 which indicates high levels of intercoder reliability (Miller et al., 2006).

3.4.3 Transcriptions of free interactions

Any attempt to capture an adequate image of the children’s language skills must include an analysis of their pragmatic skills as well. The naturalistic recordings of children’s speech are an essential part of this study capturing the children’s understanding of not just the structure of the utterances as indicated by the guided elicitation through various tasks but also the pragmatics of these utterances as demonstrated in the children’s naturalistic and constraint-free speech. The free interactions provide information about the children’s ability to give directives and responses, to ask for clarifications, and to make statements and demands. In addition to the information about the children’s language production, these recordings also offer information about the input the children received and the interactional processes and patterns, which helps form a more accurate and comprehensive view of the children’s linguistic ability. The richness of naturalistic data provided by the recordings allowed for a more complete assessment of the children’s
state of linguistic knowledge. The recorded data were used qualitatively and helped explain in detail the findings in the standardized tests and the picture-based tasks. Since the goal was to capture the language experiences of children in as much detail as possible, the recorded data exceeded 80 hours of interaction. Therefore, I took different approaches to examining the recordings that the parents made. First, the audio files were coded without transcription. I coded all recordings by setting, creating separate files for each type of interaction (conversation at dinner time, conversation at the playground, story reading at bed time, play dates, or unknown). This was done monthly. Coding by context helped me to easily identify those patterns of interactions that would enable me to explain the findings in the standardized tests as well as the story-telling tasks. In addition, I listened to all the recordings and took notes in a diary style about the essential linguistic information that was directly linked to the other tasks in the study. The next chapter presents the findings of the present study both qualitatively and quantitatively.
Chapter 4: Results

The findings of this study are provided in three main parts. The first part offers a detailed account of the linguistic and social environment of the children and their families as revealed during the interviews with the parents. The second part provides a quantitative analysis of the language tasks, PPVT-4 and CTOPP, as well as the tests especially designed for this study, namely, the Romanian-adapted PPVT-4 and the Romanian-adapted CTOPP. In addition to tracing language development over time, both PPVT-4 and the Romanian-adapted version of the PPVT-4 were used to investigate differences between vocabulary knowledge gained at home versus in an academic context. Also, the English PPVT-4 was used to establish a possible cognate advantage that Romanian-English bilingual children may have. The third part of this chapter provides a quantitative and qualitative analysis of the transcribed narratives from the series “Frog, Where Are You?” by Mayer (1969). To analyze the children’s ability to narrate a story, the Narrative Scoring Scheme (NSS) instrument was used for each story in each language. Also, the following language measures were obtained:

- length/productivity (Number of C-units and NTW - Number of Total Words);
- lexicon (NDW – Number of Different Words);
- morphosyntax (MLUw – Word-Based Mean Length of Utterance, MLUm - Morpheme-Based Mean Length of Utterance and CI-Syntactic Index);
- as well as a bilingualism score that reflects the frequency and proportions of code-switching.

4.1 Parental Interviews

4.1.1 Parent and child-related demographic data

In the first part of the interview, the parents provided demographic information about themselves and their child. Table 4 provides a summary of the demographic data related to the children’s parents. For all parents involved in the study, Romanian was the first and dominant language, the families having immigrated to Canada after 1990. The parents self-reported their knowledge of English as ranging between good and excellent, but their interactions at home were all conducted in Romanian. Also, all parents had an
undergraduate degree received in Romania, while one parent had recently received a graduate degree in Canada.

Table 4

Parent Demographic Data

<table>
<thead>
<tr>
<th>Name of the child</th>
<th>Parents</th>
<th>L1</th>
<th>No. of years of living in Canada</th>
<th>Level of Education</th>
<th>English Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan</td>
<td>Mother</td>
<td>Romanian</td>
<td>12</td>
<td>Bachelor</td>
<td>Very good</td>
</tr>
<tr>
<td></td>
<td>Father</td>
<td>Romanian</td>
<td>12</td>
<td>Bachelor</td>
<td>Very good</td>
</tr>
<tr>
<td>Radu</td>
<td>Mother</td>
<td>Romanian</td>
<td>9</td>
<td>Master’s</td>
<td>Excellent</td>
</tr>
<tr>
<td></td>
<td>Father</td>
<td>Romanian</td>
<td>9</td>
<td>Bachelor</td>
<td>Good</td>
</tr>
<tr>
<td>Moni</td>
<td>Mother</td>
<td>Romanian</td>
<td>13</td>
<td>Bachelor</td>
<td>Very good</td>
</tr>
<tr>
<td></td>
<td>Father</td>
<td>Romanian</td>
<td>13</td>
<td>Bachelor</td>
<td>Very good</td>
</tr>
</tbody>
</table>

4.1.2 Children’s Knowledge of and Exposure to Romanian

At the commencement of the study, all parents reported native-like knowledge of Romanian for all three children given that the children were able to understand and speak the language fluently. In addition, all three children had emergent literacy skills in Romanian. They were familiar with the Latin based alphabet, being able to read some simple one-syllable words.

To better understand the factors that lead to harmonious bilingual development, it is also crucial to know what the children’s language input and patterns of use were. Table 5 offers an overview of the linguistic environment inside the children’s homes describing the language interaction patterns between the children and the other family members.
### Table 5

*Patterns of home language use with the children*

<table>
<thead>
<tr>
<th>Child</th>
<th>Family member</th>
<th>Speaks to parent 2</th>
<th>Speaks to parent 1</th>
<th>Speaks to target child</th>
<th>Speaks to sibling</th>
<th>Speaks to caregiver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan</td>
<td>Parent 1</td>
<td>Romanian</td>
<td>N/A</td>
<td>Romanian</td>
<td>N/A</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>Parent 2</td>
<td>N/A</td>
<td>Romanian</td>
<td>Romanian</td>
<td>N/A</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>Target child</td>
<td>Romanian</td>
<td>Romanian</td>
<td>N/A</td>
<td>N/A</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>(Dan)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sibling – No sibling</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Caregiver</td>
<td>Romanian</td>
<td>Romanian</td>
<td>Romanian</td>
<td>Romanian</td>
<td>N/A</td>
</tr>
<tr>
<td>Radu</td>
<td>Parent 1</td>
<td>Romanian</td>
<td>N/A</td>
<td>Romanian</td>
<td>Romanian</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>Parents2</td>
<td>N/A</td>
<td>Romanian</td>
<td>Romanian</td>
<td>N/A</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>Target child</td>
<td>Romanian</td>
<td>Romanian</td>
<td>N/A</td>
<td>Romanian</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>(Radu)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sibling</td>
<td>Romanian</td>
<td>Romanian</td>
<td>Romanian</td>
<td>N/A</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>Caregiver</td>
<td>Romanian</td>
<td>Romanian</td>
<td>Romanian</td>
<td>Romanian</td>
<td>N/A</td>
</tr>
<tr>
<td>Moni</td>
<td>Parent 1</td>
<td>Romanian</td>
<td>N/A</td>
<td>Romanian</td>
<td>N/A</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>Parents2</td>
<td>N/A</td>
<td>Romanian</td>
<td>Romanian</td>
<td>N/A</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>Target child</td>
<td>Romanian</td>
<td>Romanian</td>
<td>N/A</td>
<td>N/A</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>(Moni)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sibling – No sibling</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Caregiver</td>
<td>Romanian</td>
<td>N/A</td>
<td>Romanian</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Note.* Adapted from De Houwer, 2009.
As can be seen in Table 5, all parents reported that their children spoke only Romanian at home and were cared for by their grandparents or babysitters who were monolingual speakers of Romanian. All interactions between the parents as well as between the parents and the caregivers were also in Romanian. Exposure to English was mainly through media or while playing with non-Romanian speaking friends when at the playground or during playdates.

In addition to the importance of establishing the patterns of language input and language use in the home, it is also important to know about the participant’s child care history in and outside of the home. Table 6 offers a comprehensive view of the degree of exposure to the heritage language since the children’s births.
### Table 6

*The children care history in and outside the home*

<table>
<thead>
<tr>
<th>Child</th>
<th>Age&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Main caregiver</th>
<th>Language(s) spoken to child</th>
<th>Average number of hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan</td>
<td>From (birth - 1;0)</td>
<td>Mother</td>
<td>Romanian</td>
<td>Unlimited</td>
</tr>
<tr>
<td></td>
<td>From (1;0 - 4;2)</td>
<td>Grandmother (Monolingual speaker of Romanian)</td>
<td>Romanian</td>
<td>Unlimited</td>
</tr>
<tr>
<td></td>
<td>From (4;2 - 6;2)</td>
<td>JK/SK – Public School</td>
<td>English</td>
<td>12.5 – part time</td>
</tr>
<tr>
<td></td>
<td>At 6;2</td>
<td>Grandmother + parents</td>
<td>Romanian</td>
<td>Unlimited</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gr.1- French Immersion</td>
<td>French</td>
<td>35</td>
</tr>
<tr>
<td>Radu</td>
<td>From (birth - 1;0)</td>
<td>Mother</td>
<td>Romanian</td>
<td>Unlimited</td>
</tr>
<tr>
<td></td>
<td>From (1;0 - 4;1)</td>
<td>Grandmother; Babysitter - both monolingual speakers of Romanian</td>
<td>Romanian</td>
<td>Unlimited</td>
</tr>
<tr>
<td></td>
<td>From (4;1 - 6;1)</td>
<td>JK/SK – Montessori</td>
<td>English/French</td>
<td>35h – English 7h – French unlimited</td>
</tr>
<tr>
<td></td>
<td>At 6;1</td>
<td>Parents</td>
<td>Romanian</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gr.1- French Immersion</td>
<td>French</td>
<td>35</td>
</tr>
<tr>
<td>Moni</td>
<td>From (birth - 1;0)</td>
<td>Mother</td>
<td>Romanian</td>
<td>Unlimited</td>
</tr>
<tr>
<td></td>
<td>From (1;0 - 3;10)</td>
<td>Grandmother (Monolingual speaker of Romanian)</td>
<td>Romanian</td>
<td>Unlimited</td>
</tr>
<tr>
<td></td>
<td>From (3;10 - 5;10)</td>
<td>JK/SK – Public School</td>
<td>English</td>
<td>12.5 – part time</td>
</tr>
<tr>
<td></td>
<td>At 5;10</td>
<td>Grandmother +Parents</td>
<td>Romanian</td>
<td>Unlimited</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gr.1- French Immersion</td>
<td>French</td>
<td>35</td>
</tr>
</tbody>
</table>

*Note.* Adapted from De Houwer, 2009.

JK = Junior Kindergarten; SK = Senior kindergarten

<sup>a</sup> Ages are indicated in years. A dash between ages means “from age X to age Y”;

60
As can be seen in Table 6, all three children spent their preschool years at home, where the language used by the family and caregivers was Romanian. The children’s linguistic input comes primarily from the parents and caregivers with the interactions among these persons being almost entirely in Romanian. At the age of four, two of the children, Dan and Moni, started to attend JK and SK in a part-time public kindergarten program that had English as the language of instruction for 12.5 hours per week. Radu, the third participant, attended JK and SK full time in a Montessori school where the language of instruction was English combined with daily one-hour French classes. The child, therefore, got 35 hours of instruction in English and 7 hours of instruction in French per week. At the age of 6, all three children were registered in Grade 1 in French Immersion programs with schools in York Region.

Information related to the changes in family residence and travel patterns which contribute to shaping the children’s linguistic environment (De Houwer, 2009) assists in furthering our understanding of factors that lead to successful bilingual development. Table 7 captures information about the children’s residence and long-term travel, as well as children’s exposure to the Romanian language and culture.
### Table 7

**Children’s residence and long-term travel (>1 week) since birth**

<table>
<thead>
<tr>
<th>Child</th>
<th>From (y; m)</th>
<th>Until (y; m)</th>
<th>Residence/Place visited</th>
<th>Language(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan</td>
<td>birth</td>
<td>2;0</td>
<td>Canada</td>
<td>Romanian in the house, English outside</td>
</tr>
<tr>
<td></td>
<td>2;0</td>
<td>2;2</td>
<td>Romania</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>4;11</td>
<td>5;2</td>
<td>Romania</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>5;10</td>
<td>6;2</td>
<td>Romania</td>
<td>Romanian</td>
</tr>
<tr>
<td>Radu</td>
<td>birth</td>
<td>0;8</td>
<td>Canada</td>
<td>Romanian in the house, English outside</td>
</tr>
<tr>
<td></td>
<td>0;8</td>
<td>0.10</td>
<td>Romania</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>3;5</td>
<td>3;6</td>
<td>Romania</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>4;8</td>
<td>4;10</td>
<td>Romania</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>5;9</td>
<td>5;10</td>
<td>Romania</td>
<td>Romanian</td>
</tr>
<tr>
<td>Moni</td>
<td>birth</td>
<td>1;10</td>
<td>Canada</td>
<td>Romanian in the house; English outside</td>
</tr>
<tr>
<td></td>
<td>1;10</td>
<td>1;11</td>
<td>Romania</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>3;9</td>
<td>3;10</td>
<td>Romania</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>4;10</td>
<td>4;11</td>
<td>Romania</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>5;8</td>
<td>5;9</td>
<td>Romania</td>
<td>Romanian</td>
</tr>
</tbody>
</table>

*Note. Adapted from De Houwer, 2009*
As can be seen in Table 7, all three children spent their first four years of life in Canada mainly. However, they all visited Romania frequently for periods ranging between 1 month a year and 4 months a year, thus having extra exposure to the Romanian language during those times and virtually no exposure to English. Of all three children, Dan was exposed to the Romanian language through his travels to Romania for the longest intervals at once – between 2 to 4 months. Moni is the child with the shortest exposure to Romanian through travels to Romania (between 3 to 4 weeks), while Radu’s trips to Romania ranged between 1 to 2 months.

4.1.3 Parental expectations and language attitudes

All three families expressed high expectations for their children with regard to learning and speaking the heritage language. Recognizing the importance of input and interaction in heritage language development, all three families had a “Romanian only” policy implemented in the house. Also, the fact that the children were cared for by Romanian monolingual grandmothers and caregivers helped maintain this “rule” with ease. However, an important finding in the monthly recordings prove that, despite the parents’ initial implementation of a “Romanian only” policy in the homes, English is more present in the homes than acknowledged, especially for Dan.

The children’s parents mentioned various reasons why they wanted their children to maintain the heritage language. First of all, they viewed their native language as a means of transmitting the culture and traditions and thus encouraging the children to maintain their ethnic identity: “it is very important to speak Romanian...Romanian is not just a language, it is a culture...by teaching them Romanian, you basically offer them a gift for life. She will always have it” (Moni’s father).

The children were also encouraged to speak Romanian so they can communicate with their grandparents and relatives who do not speak English: “…when she goes to Romania, she needs to know Romanian” (Moni’s mother), “Yes, my parents don’t speak English…they wouldn’t be very happy if they couldn’t communicate with her” (Moni’s father), “Our parents don’t speak English so the only way for them to get to know the children is if the children speak Romanian. And I want my children to be able to speak to their grandparents” (Radu’s father).
Another reason for wanting to transmit the heritage language to their children was related to the academic benefits that are attached to speaking other languages. For example, Radu’s father stated that “speaking Romanian will help Radu learn French faster...we plan to register him in a French immersion school when he starts grade 1”.

In addition to showing positive attitudes towards the heritage language, all three parents showed an equal enthusiasm towards languages in general. They value multilingualism and plan to encourage and support their children to learn other languages as well. Moni’s mom says: I hope she will learn French and her father adds: I would like her to learn Spanish to be able to read Garcia Marques (laughs) ...I hope we will learn it together (laughs)...I think Spanish is also a very important language. Radu’s father expresses his wish for his child to learn German as well: I went to a German immersion school in Romania all my primary and secondary years and I speak German quite well...I would like it if my children spoke German too. Further confirming their commitment to multilingualism, all three families registered their children in grade 1 in French immersion schools.

The parents in this study did not express concern about their children lagging behind monolingual English children, mentioning that they are ready to give their children extra support with English in school if needed. The parents gave equal importance to English, mentioning that no matter how well the children will speak Romanian, there was no option of not mastering English, as proficiency in English is a necessary condition for success in the Canadian society.

4.1.4 Parental General Strategies

With regards to general strategies employed by parents in order to foster and encourage the maintenance of the heritage language, a few patterns emerged throughout the discussions during the interview.

First, all three families read to their children in Romanian every day. To the question whether she read to her children in Romanian or not, Dan mother’s said: “Every day, every night, at night he would listen to stories for more than an hour...he listens quietly and sometimes he asks questions... sometimes I have to stop after three stories as I get tired but he never wants to stop...”. To the same question, Moni’s mother said:
“...yes, but I tell the stories myself most of the time rather than reading them”. And the father added: “At bed time, she (Moni) likes to climb up in bed and turn off the light and have us tell her stories.” Moni’s mom continues: “I have recently bought her books from Romania...My First Book about Nature, My First Book about Animals, these types of book, you know, and we look at the pictures and then she asks many questions about the pictures”. Moni’s mother continues by pointing out a difficulty with reading stories to Moni: “…if I read long stories word by word she gets bored very quickly and loses her patience. If I tell her the story in my own words, she listens carefully...”

Radu’s mother tries to employ this strategy as she thinks reading to children is very important but mentions having difficulty with it as well: “Radu was never patient to listen to stories....he wants to browse through the books and can’t sit still to listen to a story. He shows interest for a while and then gets bored and wants to do stuff.” Despite the difficulty, Radu’s mother finds a solution: “but I let him browse through the pages and I answer his questions...this way, he is more engaged and seems to be more interested.”

One downside with this strategy, mentioned by all three families, was the difficulty finding resources in Romanian that could help their children. The families in the present study rely solely on the resources that they bring with them from their trips to Romania, mentioning a scarcity of materials in the public libraries, schools or community centers. The parents supplemented book reading with Romanian cartoons and movies.

Another important strategy used by the parents was taking the children on annual trips to Romania where the children were exposed to a flood of input in Romanian and where the English input stopped. In one of the recordings provided by the parents, Dan mentioned how everybody speaks Romanian to him when he goes to Romania: “Vetuta (one of the grandmothers), Carmen (his aunt) and Calin (a cousin) and Mamaie Gigi (the other grandmother) and Adina and my mother and my father...everybody in Romania speaks Romanian.” Moni’s father says: “We take her to Romania so the grandparents can see her but also for her to speak Romanian. We want to show her that in Romania she has a large family.”
4.1.5 Parental Discourse Strategies

The discourse strategies used by parents to encourage their children to use Romanian in the home encompass all five parental discourse strategies as identified by Lanza (1997): minimal grasp strategy, expressed guessed strategy, repetition, move on strategy and language switch. Although at the beginning of the study all parents mentioned just the first three strategies as being used, in reality, during the duration of the study, the parents employed all five strategies to various degrees. Radu’s and Moni’s parents appeared to be more firm in maintaining a “Romanian only” policy in the home environment, while Dan’s parents were more accepting of Dan’s mixed utterances. The following example illustrates the minimal grasp strategy used by one of the mothers with her child in an everyday conversation that took place a month after the child started Junior Kindergarten. In response to the child utterance in English, the mother uses Romanian to ask the child to clarify the English utterance by pretending not to understand the utterance in English.

Mother: Cum a fost la scoală astăzi? (How was school today?)
Radu: Bine. (Good)
Mother: Ce ați făcut? (What did you do?)
Radu: Nimic. (Nothing)
Mother: Nimic? (Nothing?)
Radu: Nu. Dar știi ce? Jamie a zis un “bad word”. (No. But you know what? Jamie said a bad word)
Mother: Un “bad word”? Ce vrei să spui? Mami nu înțelege engleză. Poți să îmi spui in română? (A bad word? What do you mean? Mami doesn’t speak English. Can you tell me in Romanian?)
Radu: Adică a zis un cuvânt rău (translated from English…it should be “cuvant urat” = ugly word) (pause, thinking) Dar tu totuși câteodată știi engleză … pause…dar nu acum. (I mean she said a bad word (pause) but you do understand English sometimes…pause…but not now).
Mother: Nu, acum nu știu engleză, am uitat. (No, now I forgot English.)
Radu: Știi ce? Dacă vrei, eu pot să te invăț că eu știu bine. (You know what? If you want, I can teach you because I know (English) very well.)
Mother: *Sigur și eu te învăț română.* (Of course, and I can teach you Romanian)

Radu: *Da.* (Yes.)

At the other end of the continuum, on the bilingual side, is the language switch technique and it is illustrated in the following conversation between Dan and his mother when Dan was approximately 4;5 months.

Dan: *Bubblegum, bubblegum in a dish, How many pieces do you wish?*

Mother: *Șapte* (Seven)

Dan: *One, two, three, four, five, six…Pause– both mother and child start laughing.*

Dan: *You won.*

Mother: *Știam că șapte cade la tine* (I knew you would be seven).

Dan: *How?*

Mother: *Pentru că uite pune mâna așa* (Because look…keep your hand like this)

Dan: *But you are supposed to guess.*

Mother: *I know but fi atent, îți spun un număr…* (I know but listen…I will tell you a number…).

### 4.2. Language Tasks

The first language task completed by the participants was the PPVT-4 and its Romanian-adapted version at six different points in time: T1 (JK fall), T2 (JK spring), T3 (SK fall), T4 (SK spring), and T5 (Grade 1 fall). The three participants also completed the CTOPP and its Romanian-adapted version at T5 (Grade 1 fall) at the age of 6. The following subsections present the results for the language tasks.

#### 4.2.1 PPVT- 4 English and Romanian-adapted version

Since there are no monolingual norms for Romanian receptive vocabulary knowledge, or norms for English-Romanian bilingual children, PPVT-4 raw scores were chosen for both the English and the Romanian-adapted version in order to compare the Romanian and English results. This allowed for assessing trends in vocabulary development without monolingual norm referencing and made possible the comparison between the two languages. However, the percentile for the English data allowed for an examination of how the children’s receptive vocabulary development compared to that of
native speakers over time. PPVT-4 English raw scores and percentiles, as well as the raw scores for the Romanian-adapted PPVT-4 are presented in Table 8.

Table 8

*Raw scores and Percentiles of PPVT-4 English and Romanian for the three children*

<table>
<thead>
<tr>
<th>Child</th>
<th>Time</th>
<th>English Raw Scores</th>
<th>Percentile</th>
<th>Romanian Raw scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan</td>
<td>T1</td>
<td>43</td>
<td>16</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>79</td>
<td>61</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>85</td>
<td>47</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>T4</td>
<td>102</td>
<td>70</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>T5</td>
<td>102</td>
<td>47</td>
<td>133</td>
</tr>
<tr>
<td>Radu</td>
<td>T1</td>
<td>55</td>
<td>34</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>89</td>
<td>79</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>110</td>
<td>86</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>T4</td>
<td>113</td>
<td>87</td>
<td>115</td>
</tr>
<tr>
<td></td>
<td>T5</td>
<td>142</td>
<td>97</td>
<td>128</td>
</tr>
<tr>
<td>Moni</td>
<td>T1</td>
<td>20</td>
<td>2</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>54</td>
<td>19</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>56</td>
<td>13</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>T4</td>
<td>85</td>
<td>45</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>T5</td>
<td>114</td>
<td>79</td>
<td>102</td>
</tr>
</tbody>
</table>
In Figures 2 (a), 2 (b) and 2 (c) the children’s raw scores for the English PPVT-4 and Romanian-adapted PPVT-4 are plotted at each round of data collection.

(a) Dan

(b) Radu
Figure 2. Peabody Picture Vocabulary Test English and Romanian-adapted raw scores for five points in time (a) for Dan; (b) for Radu; and (c) for Moni

Figure 2 (a) reveals that Dan’s English and Romanian raw scores were almost equal at the start of the study (T1), and they both continued to grow over the two year period of time, with Romanian surpassing English at T5. The most sudden growth for English was from T1 (when Dan started JK) to T2 in the Spring session (after 6 months of English instruction). Dan’s English receptive vocabulary thereafter displayed slower but steady growth. For Romanian, Dan experienced a sudden spike in his receptive vocabulary knowledge at two points in time: one between T1 (Fall JK) to T2 (Spring JK) and a second time between T4 (Spring SK) to T5 (Fall Gr.1) following a 4 month visit to Romania.

Figure 2 (b) reveals that Radu’s raw scores for both Romanian and English were almost equal at T1, with Romanian showing a small advantage. Both languages continue to develop over the two year period of time, with English showing a slight advantage over Romanian at T5. Radu’s English raw scores increased suddenly from T1 (when he started attending JK in English) to T2, and then from T4 (when he started SK in English)
to T5. The development of his Romanian receptive vocabulary from T1 to T5 was steady without periods of stagnation or attrition.

Figure 2 (c) shows that at T1, Moni’s raw scores for Romanian were higher than the raw scores for English and continued to be so until T5, when the English raw score surpassed the Romanian one. Both Romanian and English raw scores continued to grow over the two year period of time, with a sudden growth for the English scores from T1 (when she started attending JK in English) to T2, and then again from T3 to T4 as well as from T4 to T5. Moni’s Romanian raw scores also increased over the two year period but encountered two periods of decrease: from T2 to T3 and from T4 to T5.

In sum, all three children’s raw scores for both English and Romanian showed continuous growth from T1 to T5. Dan’s and Radu’s raw scores for English and Romanian were almost equal at T1 (though Dan’s raw score for Romanian was higher than for English, and Radu’s the other way around). Moni started at T1 with a higher raw score for Romanian, but at T5 her English raw score was superior to the Romanian one. All three children experienced a spike in their receptive English vocabulary knowledge from T1 to T2 after they started JK in English.

Figure 3 reproduces the plot for percentile scores for the English data for all three children, which was also presented in Table 8. What these scores indicate is whether or not the children were performing as would be expected based on the monolingual norms. The mean percentile is the 50th percentile.
Figure 3. Peabody Picture Vocabulary Test English percentile for five points in time

Figure 3 reveals that Dan’s percentile score at T1 was under the mean percentile (%ile = 16), while at T2 and T4 of data collection his scores were above the average monolingual data (%ile = 61 and 70 respectively). However, Dan’s English skills went through an attrition stage, scoring just under the 50th percentile at T3 and T5 (%ile = 47 at both T3 and T5). The same figure shows that Radu’s percentile was also below the average monolingual child’s (%ile = 34) at T1, but he experienced steady improvement over the two-year period of time, having a percentile above the average at T5 (%ile = 97). According to Figure 3, Moni’s percentile was below the average monolingual score (%ile = 2) at T1 but above the average at T5 (%ile = 79). She encountered steady improvement over the two year period of time with a slight decline from T2 to T3 (%ile = 19 at T2 and %ile = 13 at T3). Overall, all three children’s percentile scores improved dramatically from T1 to T5, with Radu and Moni exceeding the mean scores at T5 and Dan just arriving at the mean at T5 after he was above the mean at T4.

4.2.1.1 Item category Analysis: Home Versus Academic Words

The PPVT-4 data were further analyzed using two conceptual frameworks: home/academic category and cognate/non-cognate category.

To explore whether certain portions of the children’s vocabulary are affected by the context where they are used (home or school), the items in the PPVT-4 were classified as “home” and “academic” items. Of the total number of items present in the
Form B of the PPVT-4, 20% were classified as “home” items and 20% as “academic” items. Note that the analysis was run with items that ranged between the 1,000 to 8,000 frequency levels as discussed in the method chapter. Table 9 presents the distribution of the items in each home/academic category within the frequency levels.

**Table 9**

*Frequency levels within the academic and home categories on the PPVT-IV*

<table>
<thead>
<tr>
<th>Form</th>
<th>BNC Frequency level</th>
<th>Home</th>
<th>Academic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form B</td>
<td>&lt;8,000 level</td>
<td>97.3%</td>
<td>79.24%</td>
</tr>
<tr>
<td></td>
<td>&gt;8,000 level</td>
<td>0.7%</td>
<td>18.8%</td>
</tr>
<tr>
<td></td>
<td>Unknown</td>
<td>0%</td>
<td>1.94%</td>
</tr>
</tbody>
</table>

As can be seen in Table 9, three items (amounting to 1.94% of the total) could not be found in the BNC and Lextutor corpora, and therefore, assigning these words to a frequency band was not possible. For this reason, they were excluded from the present analysis.

An analysis of receptive vocabulary knowledge in terms of these two categories was run for each child at T1 at the beginning of the study, as well as at T5 at the end of the study. Note that the data were analyzed at these two points in time only, due to the limited number of items present in the test, as discussed in the Method chapter. The percentages for correct answers in each category were tabulated for each child, producing a percentage score for each of the home and academic word category. The results of the analysis are presented in Table 10.
Table 10

**PPVT-4 Percentage of the correct answers for academic and home categories**

<table>
<thead>
<tr>
<th>Child</th>
<th>Home</th>
<th>Academic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>English</td>
<td>Romanian</td>
</tr>
<tr>
<td></td>
<td>T1</td>
<td>T5</td>
</tr>
<tr>
<td>Dan</td>
<td>77</td>
<td>94</td>
</tr>
<tr>
<td>Radu</td>
<td>86</td>
<td>100</td>
</tr>
<tr>
<td>Moni</td>
<td>60</td>
<td>97</td>
</tr>
</tbody>
</table>

Figures 4 (a), 4 (b), and 4 (c) reproduce the plot of percentage scores for the “home”/”academic” items for all three children at T1 and T5.

(a) Dan
Figure 4 reveals that at T1 Dan’s percentage score for the home Romanian items is the highest (85%) with the percentage for the academic English being the lowest.
(42%). At T5, Dan’s percentage scores for the home items for both Romanian and English are very high (100% and 94 % respectively), while his percentage for the academic items are 80% for English and 66% for Romanian. The biggest increase Dan experiences is between T1 academic English and T5 academic English (from 42% to 77%). While the academic Romanian continues to increase from T1 to T5, it is this category that lags behind all the others at T5.

Figure 4 (b) reveals that at T1 Radu’s scores for both home Romanian and English are higher and almost equal (88% for Romanian and 86% for English) than their academic counterparts (64% for Romanian and 42% for English), with the academic English being lower than all other categories. At T5, Radu shows improvement in all categories except for the Romanian academic scores, which remain constant. Radu’s academic English improves the most between T1 and T5: from 42% at T1 to 74% at T5.

Figure 4 (c) reveals that at T1, Moni’s scores for home Romanian (88%) and home English (60%) are higher than their academic counterparts (51% for Romanian and 20% for English). At T5, all scores improve except for the academic Romanian scores, which stay almost the same (and lag behind all the other categories). Moni’s academic English scores improve the most between the two points in time (20% at T1 vs. 64% at T5), while her home English also encounters an improvement (60% at T1 vs. 97% at T5). The great advantage Moni had with her home Romanian scores over the home English scores at T1 has disappeared by T5, with scores for both home Romanian and English being equal at T5.

In sum, at T1 all three children’s scores for home Romanian were the highest of all other scores and the academic English the lowest or equal with academic Romanian (Dan’s case). At T5, the picture changes, with the children’s scores for home English being equal to those of home Romanian, and their scores of academic English encountering the most dramatic increase (exceeding their academic Romanian scores). In all three cases, the scores for the academic Romanian are the lowest at T5.

4.2.1.2 Cognate versus Non-Cognate Words

Another point of interest in this study was to see whether and how a language like Romanian influences the development of English. In order to investigate the crosslinguistic influence, the items from the PPVT-4 were classified as either cognates or
non-cognates. Table 11 presents the distribution of the cognates and non-cognates in the two forms of the PPVT-4.

**Table 11**

*Distribution of cognates/non-cognates in the PPVT-4*

<table>
<thead>
<tr>
<th>Form</th>
<th>Cognate</th>
<th>Non-cognate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>COSP&gt;5</td>
<td>COSP&lt;5</td>
</tr>
<tr>
<td>Form B</td>
<td>30% (57 items)</td>
<td>11% (22 items)</td>
</tr>
</tbody>
</table>

*Note. COSP = Crosslinguistic Overlap Scale for Phonology*

Only the items that had a COSP score higher than 5 were included in the present analysis. Also, only the items that were known in Romanian as well as in English were included in the analysis. Table 12 shows the percentage of correct answers for the English PPVT-4 items broken down by cognate category at T1 to T5.

**Table 12**

*Percentage of correct answers among cognates and non-cognates*

<table>
<thead>
<tr>
<th>Child</th>
<th>Cognate</th>
<th>Non Cognate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T1</td>
<td>T5</td>
</tr>
<tr>
<td>Dan</td>
<td>66%</td>
<td>93%</td>
</tr>
<tr>
<td>Radu</td>
<td>83%</td>
<td>94%</td>
</tr>
<tr>
<td>Moni</td>
<td>50%</td>
<td>78%</td>
</tr>
</tbody>
</table>

*Note. T1 = Time 1; T5 = Time 5*

According to Table 12, Dan’s percentage of correct answers is higher for non-cognates than cognates at T1 and slightly lower at T5. In contrast, Radu correctly answered a visibly higher proportion of cognates than non-cognates at both T1 and T5. Moni, exhibits a different behavior, scoring a higher percentage of correct answers for cognates at T1 and lower at T5. To sum up, the children exhibit mixed behavior with regard to cognate recognition. Only Radu shows a possible cognate advantage at both T1 and T5. Dan does not seem to exhibit any cognate advantage at either times while Moni
shows a cognate advantage at the beginning of the study (T1), an advantage that seems to have disappeared at T5.

4.2.2 CTOPP – English version

In order to assess the children’s phonological processing skills in English, CTOPP standardized scores were calculated. The results are presented in Table 13.

Table 13
CTOPP-Standardized composite scores

<table>
<thead>
<tr>
<th>CTOPP Composites</th>
<th>Child</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dan</td>
</tr>
<tr>
<td></td>
<td>%ile</td>
</tr>
<tr>
<td>Phonological awareness</td>
<td>81</td>
</tr>
<tr>
<td>Phonological Memory</td>
<td>58</td>
</tr>
<tr>
<td>Rapid Naming</td>
<td>79</td>
</tr>
</tbody>
</table>

Note. %ile = Percentile Rank; StdS=Standard Score; CS = Composite Score

The three composite scores generated indicate the children’s ability relative to phonological awareness, phonological memory, and rapid naming. Table 13.1 provides a guide to interpreting the CTOPP Composite Scores.
Table 13.1

Guide to Interpreting CTOPP Composite Scores

<table>
<thead>
<tr>
<th>Standard Scores</th>
<th>Description</th>
<th>Percentage Included in Bell-Shape Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>131-165</td>
<td>Very Superior</td>
<td>2.34</td>
</tr>
<tr>
<td>121-130</td>
<td>Superior</td>
<td>6.34</td>
</tr>
<tr>
<td>111-120</td>
<td>Above Average</td>
<td>16.12</td>
</tr>
<tr>
<td>90-110</td>
<td>Average</td>
<td>49.51</td>
</tr>
<tr>
<td>80-89</td>
<td>Below Average</td>
<td>16.12</td>
</tr>
<tr>
<td>70-79</td>
<td>Poor</td>
<td>6.87</td>
</tr>
<tr>
<td>35-69</td>
<td>Very Poor</td>
<td>2.34</td>
</tr>
</tbody>
</table>

An analysis of the children’s composite scores, shown in Table 13, suggests that their phonological processing abilities are either average or above average (see Table 13.1), with Radu’s phonological awareness skills (128) falling within the “superior” category. As shown in Table 13, Dan’s composite scores suggest that his phonological awareness and rapid naming skills are above average (see also Table 13.1), while his phonological memory is at par with that of monolingual children. Similarly, an analysis of Radu’s composite scores, also shown in Table 13, suggests that his rapid naming skills are at par with those of monolingual children, while his phonological memory is above average and his phonological awareness is superior. Furthermore, a similar analysis of Moni’s composite standard scores reveals that her phonological processing abilities are at par with monolingual children. More precisely, she has average phonological awareness, phonological memory and rapid naming skills (see Table 13.1).

Table 14 describes the children’s performance on the subtests that make up the composite scores.
Table 14

*Subtest Standard Scores*

<table>
<thead>
<tr>
<th>CTOPP Subtests</th>
<th>Child</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Dan</td>
<td>Radu</td>
<td>Moni</td>
<td></td>
</tr>
<tr>
<td></td>
<td>%ile</td>
<td>Std.S</td>
<td>%ile</td>
<td>Std.S</td>
<td>%ile</td>
</tr>
<tr>
<td>Elision</td>
<td>91</td>
<td>14</td>
<td>99</td>
<td>18</td>
<td>16</td>
</tr>
<tr>
<td>Rapid Color Naming</td>
<td>75</td>
<td>12</td>
<td>50</td>
<td>10</td>
<td>37</td>
</tr>
<tr>
<td>Blending Words</td>
<td>50</td>
<td>10</td>
<td>63</td>
<td>11</td>
<td>63</td>
</tr>
<tr>
<td>Sound Matching</td>
<td>75</td>
<td>12</td>
<td>91</td>
<td>14</td>
<td>50</td>
</tr>
<tr>
<td>Rapid Object Naming</td>
<td>75</td>
<td>12</td>
<td>37</td>
<td>9</td>
<td>50</td>
</tr>
<tr>
<td>Memory for Digits</td>
<td>50</td>
<td>10</td>
<td>50</td>
<td>10</td>
<td>37</td>
</tr>
<tr>
<td>Nonword Repetition</td>
<td>63</td>
<td>11</td>
<td>91</td>
<td>14</td>
<td>91</td>
</tr>
<tr>
<td>Blending Nonwords</td>
<td>75</td>
<td>12</td>
<td>75</td>
<td>12</td>
<td>63</td>
</tr>
</tbody>
</table>

Note. %ile = Percentile; Std.S = Standard Score

Table 14.1 provides a guide to interpreting the CTOPP Subtest Standard Scores.

Table 14.1

*Guide to Interpreting the CTOPP Subtest Standard Scores*

<table>
<thead>
<tr>
<th>Standard Scores</th>
<th>Description</th>
<th>Percentage Included in Bell-Shape Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-20</td>
<td>Very Superior</td>
<td>2.34</td>
</tr>
<tr>
<td>15-16</td>
<td>Superior</td>
<td>6.34</td>
</tr>
<tr>
<td>13-14</td>
<td>Above Average</td>
<td>16.12</td>
</tr>
<tr>
<td>8-12</td>
<td>Average</td>
<td>49.51</td>
</tr>
<tr>
<td>6-7</td>
<td>Below Average</td>
<td>16.12</td>
</tr>
<tr>
<td>4-5</td>
<td>Poor</td>
<td>6.87</td>
</tr>
<tr>
<td>1-3</td>
<td>Very Poor</td>
<td>2.34</td>
</tr>
</tbody>
</table>
As shown in Table 14, all three children’s standard scores for all subtests fall either within the “average” category or “above average” category (see Table 14.1), with Radu’s standard scores for Elision (18) falling into the “very superior” category. An analysis of Dan’s subtest standard scores, also shown in Table 14, suggests that his scores for Elision (14) are above average whereas his scores for Rapid Color naming (12), Blending Words (10), Sound Matching (12), Rapid Object Naming (12), Memory for Digits (10), Nonword Repetition (11) and Blending Nonwords (12) fall within the “average category”. A similar analysis shows that Radu’s standard scores for Rapid Color Naming (10), Blending Words (11), Rapid Object Naming (9), Memory for Digits (10) and Blending Nonwords (12) are in the “average” category, with his scores for Sound Matching (14) and Nonword Repetition (14) being in the “above average” category and his standard scores for Elision (18) falling within the “very superior” category. An analysis of Moni’s subtest standard scores, also shown in Table 14, suggests that her scores for Elision (7) fall within the “below average” category, whereas her standard scores for Rapid Color Naming (9), Blending Words (11), Sound Matching (10), Rapid Object Naming (10), Memory for Digits (9) and Blending Nonwords (11) fall within the “average” category and her standard scores for Nonword Repetition (14) fall within the “above average” category.

To sum up, all three children’s phonological processing skills in English are either at par with those of monolingual children or superior.

4.2.3 CTOPP – Romanian-adapted version

In order to assess the children’s phonological skills in Romanian, an adapted version of the CTOPP was administered at T5. Since there are no monolingual norms for Romanian phonological skills, CTOPP raw scores were generated for both the Romanian-adapted version as well as for English. This made it possible to examine scores for the two languages side by side. The raw scores for the Romanian-adapted CTOPP along with the raw scores for the English CTOPP are presented in Table 15.
### Table 15

**Raw scores for Romanian-adapted CTOPP and English CTOPP**

<table>
<thead>
<tr>
<th>CTOPP Subtests</th>
<th>Dan</th>
<th>Radu</th>
<th>Moni</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RS-E</td>
<td>RS-R</td>
<td>RS-E</td>
</tr>
<tr>
<td>Elision</td>
<td>13</td>
<td>7</td>
<td>19</td>
</tr>
<tr>
<td>Rapid Color Naming</td>
<td>68</td>
<td>60</td>
<td>87</td>
</tr>
<tr>
<td>Blending Words</td>
<td>6</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Sound Matching</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Rapid Object Naming</td>
<td>77</td>
<td>84</td>
<td>100</td>
</tr>
<tr>
<td>Memory for Digits</td>
<td>11</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Nonword Repetition</td>
<td>10</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Blending Nonwords</td>
<td>7</td>
<td>9</td>
<td>7</td>
</tr>
</tbody>
</table>

*Note.* RS-E = Raw Scores for the English CTOPP; RS-R = Raw Scores for the Romanian-adapted CCTOPP

**Phonological Awareness.** Three measures were used from the Romanian–adapted CTOPP in order to assess phonological awareness: Elision, Blending and Sound Matching. Figures 5 (a), 5 (b) and 5 (c) reproduce the plot of raw scores for each of the three subtests that make up the phonological awareness composite for all three children at T5.
(a) Dan

(b) Radu

Measures of Phonological Awareness
As is evident in Figures 5 (a), 5 (b) and 5 (c), the children exhibit mixed profiles in the three subtests. Dan’s Romanian raw scores for the Sound Matching task (Figure 5a) are the highest, with the scores for the Blending Words and the Elision tasks following in the respective order. Compared to the English profile, Dan’s Romanian scores for both the Blending Words and Sound Matching tasks are higher than the English scores for the same tasks and the scores for the Elision tasks are lower for Romanian. Figure 5 (b) reveals that Radu’s Romanian raw scores for the Elision and the Sound Matching tasks are equal, and his scores for the Blending Words are lower than the scores for the other two tasks. When compared to the English data, Radu’s Romanian raw scores for the Blending Words task exceed the English scores for the same task, while his Romanian scores for the Elision and the Sound Matching tasks lag behind the English scores slightly. Figure 5 (c) reveals that Moni’s Romanian raw scores for all three subtests are higher than the English scores with the scores for the Sound Matching task being the highest, followed in order by the scores for the Blending Words and the Elision tasks.

Phonological memory. Phonological memory was assessed with two measures from the Romanian-adapted CTOPP (i.e. Memory for Digits and Memory for Nonwords). Figures
6 (a), 6 (b), and 6 (c) reproduce the plot of raw scores for each of the two subtests that make up the phonological memory composite for all three children at T5.

(a) Dan

(b) Radu
Figure 6. Raw scores – Subtests that make up the phonological memory composite at T5 (a) for Dan; (b) for Radu; and (c) for Moni

As can be seen from Figure 6 (a), Dan’s raw scores for the two subtests that make up the core for the phonological memory composite are almost identical for English and Romanian. The same behaviour is exhibited by Radu whose scores for the Memory for Digits and Nonword Repetition subtests are very close for both English and Romanian (Figure 6 b). Figure 6 (c) shows that Moni’s scores for the Memory for Digits task are slightly higher for Romanian than for English, while her scores on the Nonword repetition task for English are higher than for Romanian. One observation that can be made from the three children’s profiles is that all three have almost equal scores for both languages on the Memory for Digits task with a slight advantage for Romanian. The advantage reverses for the Nonword repetition task with Dan’s and Radu’s English scores being slightly higher than the Romanian ones and with Moni’s English scores exhibiting a more conspicuous advantage when compared to Romanian.

Rapid Naming. Two measures assessed the efficient retrieval of phonological information from long-term memory: Rapid Colour Naming and Rapid Object Naming. The raw scores for both English and the Romanian-adapted version of the two subtests are presented in Table 15. Note that due to a difference in the number of syllables in many test items, a direct comparison between the Rapid Naming tasks in the two languages is difficult.
4.3 Narrative Discourse as a Reflection of Morphosyntactic, Lexical, and Discourse Competence

The wordless picture book task narratives elicited at five different points in time in either Romanian only or both Romanian and English were evaluated for both macrostructure and microstructure measurements.

4.3.1 Narrative Macrostructure (NSS)

The narrative macrostructure measure used in this study is the Narrative Structure Scheme (NSS). Each narrative was scored on seven features of storytelling such as “introduction”, “character development”, “mental states”, “referencing”, and “cohesion”. The children’s NSS scores were then compared to the SALT database of peers.

4.3.1.1 Romanian Narratives

The children’s NSS scores for the Romanian narratives are presented in Table 16.

<table>
<thead>
<tr>
<th>Child</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan</td>
<td>10</td>
<td>13</td>
<td>17</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Radu</td>
<td>10</td>
<td>10</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Moni</td>
<td>12</td>
<td>13</td>
<td>13</td>
<td>17</td>
<td>18</td>
</tr>
</tbody>
</table>

One important characteristic of narrative competence is the ability to construct a narrative that is organized around a plot in a coherent integrated whole. The stories used contain between 28 and 30 images and represent typical stories with the same main protagonists, a little boy, a frog and a dog, an initial event that determines the subsequent events, and a happy ending with the conflict being resolved.

Table 16 shows that all three children significantly improved their NSS scores from T1 to T5. The results of the study also suggest that the children did not engage easily in the narration task during the first two rounds of data collection. Their narratives at T1 and T2 for all three children as well as T3 for Moni, were not elaborate, lacked a clearly stated problem, made minimal reference to reactions of the characters to the problem, and
had an incompletely articulated final outcome. The children referred to the boy and the little animals’ adventures as individual episodes and did not attempt to reach a goal, thus producing texts that were organized around individual pictures rather than a specific goal.

At T4 and T5 all three children started producing narratives in which they made more consistent reference to the story components and provided more details about the settings, characters and plot resolution. Their narratives displayed thematic coherence with extensive references to the onset of the plot, its development and explicit mentioning of its resolution.

The following section presents the scores for the individual categories that make up the composite scores for each child. Table 17 shows the scores for Dan.

**Table 17**

*Dan’s NSS scores along with the composite scores for Romanian unique story-telling*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>T2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>T3</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>T4</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>T5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>20</td>
</tr>
</tbody>
</table>

*Note.* Intr. = Introduction; Character Dev. = Character Development; Ref. = Reference; Conflict Res. = Conflict Resolution; Coh. = Cohesion; Concl. = Conclusion; NSS = Narrative Scoring Scheme

Based on Table 17, Dan’s composite scores on the NSS steadily increased from T1 to T5 with significant increases from T1 throughout T3. Dan’s narrative skills at T1 and T2 were basic with all the categories that make up the composite scores being at the minimal level. His narration lacked smooth transitions, contained unclear referents and had minimal details necessary for character development. At T3 and onwards, Dan showed improvement in his narration skills. His narratives had more consistent reference to the story components and contained more details about the setting and characters. He
also made use of mental states words (wants, feels) which were absent in his earlier narrations. The lack of database samples within SALT for comparison at T1 makes it impossible to compare Dan’s performance at T1 but such a comparison was possible and is presented in Figure 7 for Dan’s NSS scores at T5. The sample was compared to a database of age-matched peers to assign age specific performance levels using the following settings:

*Database comparison criteria:* based on entire transcript (entire story)

*Database sample:* 141 typical bilingual peers, ages 5;7-6;7, narrating unique story in Spanish (*One Frog Too Many* – OFTW). The decision to compare the children’s performance with that of bilingual children rather than monolingual ones was based on the fact that the conditions for eliciting narratives with bilinguals in the database were identical with the ones in the present study, unlike the conditions for the monolinguals who had to retell a story rather than to narrate a unique story. Retelling a story has been found to elicit longer narratives with more complex syntax and varied vocabulary (Morris-Friehe & Sanger, 1992).

<table>
<thead>
<tr>
<th>NARRATIVE SCORING SCHEME</th>
<th>DATABASE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NSS Category</strong></td>
<td><strong>Score</strong></td>
</tr>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>CharacterDev</td>
<td>3</td>
</tr>
<tr>
<td>MentalStates</td>
<td>3</td>
</tr>
<tr>
<td>Referencing</td>
<td>3</td>
</tr>
<tr>
<td>ConflictRes</td>
<td>3</td>
</tr>
<tr>
<td>Cohesion</td>
<td>3</td>
</tr>
<tr>
<td>Conclusion</td>
<td>2</td>
</tr>
<tr>
<td><strong>NSS Score</strong></td>
<td></td>
</tr>
</tbody>
</table>

*At least 1 SD (** 2 SD) from the database mean

Database selection criteria: age +/- 6 months

**Figure 7. Database Menu: Narrative Scoring Scheme for Dan at T5**

His composite score on the NSS was 20 out of 35 which is within normal limits for his age. The individual scores for each category were also within normal limits for his age. Dan’s individual scores for Mental States category as well as for Referencing were slightly below the mean database scores but still within normal limits.
Radu’s composite scores as well as the individual scores on the NSS are presented in Table 18.

### Table 18

*Radu’s NSS scores along with the composite scores for Romanian unique story-telling*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>T2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>T3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>T4</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>T5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>20</td>
</tr>
</tbody>
</table>

*Note.* Intr. = Introduction; Character Dev. = Character Development; Ref. = Reference; Conflict Res. = Conflict Resolution; Coh. = Cohesion; Concl. = Conclusion; NSS = Narrative Scoring Scheme

Radu’s composite scores on NSS also increased from T1 to T5 with a sudden improvement from T2 to T3. Radu’s narratives skills at T1 and T2 were minimal (basic). All the individual categories that make up the composite scores were at a minimal level at both T1 and T2. Radu did attempt to provide details about the setting while narrating the story and also used some mental state words (feel, think) to develop the characters but his narrations at both T1 and T2 appeared mechanical, lacking smooth transitions and consistent mentioning of the involved characters necessary for advancing the plot. He also ended the narratives without any statements made as to the conclusion of the whole story. This picture changed at T3 when Radu’s narrative skills showed a dramatic improvement. The trend continued and Radu showed improvement at each round of data collection that followed T3. Radu’s sample at T5 was compared to age-matched peers from the SALT reference database using the following settings:

*Database comparison criteria:* based on entire transcript (entire story)

*Database sample:* 141 typical bilingual peers, ages 5;7-6;7, narrating unique story in Spanish (*One Frog Too Many* – OFTW).

The SALT analysis is presented in Figure 8.
Based on Figure 8, Radu’s composite score on the NNS at T5 was 20 out of 35 which is within normal limits for his age. His individual scores were also within normal limits for his age and showed an emergent story teller who launched into the story by providing descriptions of the setting intermittently throughout the story and by occasionally offering descriptions of specific setting elements. He also used mental state words to develop characters, followed the events in a logical order and concluded the story by concluding the specific event he was relating and by acknowledging the end and the pleasure for the story.

Moni’s composite scores as well as the individual scores on the NSS are presented in Table 19.
Table 19

Moni’s NSS scores along with the composite scores for Romanian unique story-telling

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>T2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>T3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>T4</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>T5</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>18</td>
</tr>
</tbody>
</table>

Note. Intr. = Introduction; Character Dev. = Character Development; Ref. = Reference; Conflict Res. = Conflict Resolution; Coh. = Cohesion; Concl. = Conclusion; NSS = Narrative Scoring Scheme

Moni’s composite scores at T1, T2 and T3 were significantly lower than at T4 and T5. The structure and content of Moni’s narrative language sample at T1, T2 and T3 was in the minimal/basic range. Moni’s individual scores at T1, T2 and T3 show a story teller who launched into the stories offering minimal details about the setting and the characters, used no mental state words to develop the characters, made almost no use of transitions and ended the story abruptly having the examiner confirm that the story has ended. These led to stories that lacked coherence and were made of choppy, fragmented statements. The scores improved significantly at T4 and T5 when Moni’s composite scores on the NSS were 17 and 18 respectively.

Moni’s sample at T5 was compared to age-matched peers from the SALT reference database using the following settings:

Database comparison criteria: based on entire transcript (entire story)

Database sample: 141 typical bilingual peers, ages 5;4-6;4, narrating unique story in Spanish (One Frog Too Many – OFTW).

The SALT analysis is presented in Figure 9.
When compared to the database of peers, Moni’s scores appeared within the normal limits for her age. Also, her individual scores were within normal limits when compared to age-matched peers.

In conclusion, at the beginning of the study, all three children exhibited minimal/basic skills when narrating the stories in Romanian, skills that have improved as they aged and started formal instruction in English, becoming emergent story tellers whose narrative skills were at par with those of other bilingual children their age.

**Figure 9. Database Menu: Narrative Scoring Scheme for Moni at T5**

When compared to the database of peers, Moni’s scores appeared within the normal limits for her age. Also, her individual scores were within normal limits when compared to age-matched peers.

In conclusion, at the beginning of the study, all three children exhibited minimal/basic skills when narrating the stories in Romanian, skills that have improved as they aged and started formal instruction in English, becoming emergent story tellers whose narrative skills were at par with those of other bilingual children their age.

**4.3.1.2 English Narratives**

The following section presents the findings for the English narratives. The same Frog stories that were used for the Romanian data were also administered in English in the same order at T2, T3, T4 and T5. Note that there was no data collection for the English narratives at T1 as the children’s English was limited at that time.

Table 20 presents the children’s scores on the English NSS.
Table 20

NSS scores for the English narratives

<table>
<thead>
<tr>
<th>Child</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan</td>
<td>13</td>
<td>14</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>Radu</td>
<td>16</td>
<td>16</td>
<td>19</td>
<td>21</td>
</tr>
<tr>
<td>Moni</td>
<td>12</td>
<td>12</td>
<td>15</td>
<td>18</td>
</tr>
</tbody>
</table>

The results show that all three children improved their NSS scores from T2 to T5. Dan’s scores improved steadily from T2 to T5 with a more significant increase from T3 to T4. Radu’s and Moni’s scores stagnated from T2 to T3, only to increase at each round of data collection that followed. The findings suggest that, from the very beginning, the children engaged fairly easily in the narration task in English given their limited exposure to the language. Notice that at T2, after only 6 months of English instruction, the children performed either equally or better than they did in Romanian. By the end of the Senior Kindergarten, at T5, all three children were able to produce English narratives that were cohesive, with an explicitly motivated beginning, a complex reaction by the main protagonists to the problem and a final resolution.

The following section presents the individual and composite scores for each child at a time. Table 21 shows the scores for the individual categories that make up the composite scores for Dan.

Table 21

Dan’s NSS scores along with the composite scores for English unique story-telling

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>T3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>T4</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td>T5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>19</td>
</tr>
</tbody>
</table>

*Note.* Intr. = Introduction; Character Dev. = Character Development; Ref. = Reference; Conflict Res. = Conflict Resolution; Coh. = Cohesion; Concl. = Conclusion; NSS = Narrative Scoring Scheme
Based on Table 21, Dan’s composite scores on the NSS steadily increased from T1 to T5 with significant increases from T3 to T4. One individual score that improved significantly from T2 to T5 is the score for the Mental State category. Dan used no mental state words to develop characters at T2, but these words started to emerge in his narrative at T5. Another observation is that his scores for the Reference category remained constant throughout the data collection period, the child using the referents and the antecedents inconsistently throughout the stories. Except for the Reference and the Conclusion categories, all the individual scores for the other categories improved from T2 to T5.

Dan’s sample was compared to a database of age-matched children to assign specific performance levels using the following settings:

*Database comparison criteria*: based on entire transcript (entire story).

*Database sample*: 147 typical bilingual peers, ages 5;8-6;8, narrating unique story in English (*One Frog Too Many* – OFTW).

The SALT analysis is presented in Figure 10.

<table>
<thead>
<tr>
<th>NSS Category</th>
<th>Score</th>
<th>+/-SD</th>
<th>Mean</th>
<th>Min</th>
<th>Max</th>
<th>SD</th>
<th>%SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>3</td>
<td>0.73</td>
<td>2.14</td>
<td>0</td>
<td>4</td>
<td>1.18</td>
<td>55%</td>
</tr>
<tr>
<td>CharacterDev</td>
<td>3</td>
<td>0.50</td>
<td>2.49</td>
<td>0</td>
<td>4</td>
<td>1.02</td>
<td>41%</td>
</tr>
<tr>
<td>MentalStates</td>
<td>3</td>
<td>0.18</td>
<td>2.80</td>
<td>0</td>
<td>5</td>
<td>1.13</td>
<td>40%</td>
</tr>
<tr>
<td>Referencing</td>
<td>2</td>
<td>-0.77</td>
<td>2.78</td>
<td>0</td>
<td>5</td>
<td>1.02</td>
<td>37%</td>
</tr>
<tr>
<td>ConflictRes</td>
<td>3</td>
<td>0.85</td>
<td>2.13</td>
<td>0</td>
<td>5</td>
<td>1.03</td>
<td>48%</td>
</tr>
<tr>
<td>Cohesion</td>
<td>3</td>
<td>0.80</td>
<td>2.16</td>
<td>0</td>
<td>5</td>
<td>1.05</td>
<td>49%</td>
</tr>
<tr>
<td>Conclusion</td>
<td>2</td>
<td>-0.35</td>
<td>2.46</td>
<td>0</td>
<td>5</td>
<td>1.30</td>
<td>53%</td>
</tr>
<tr>
<td>NSS Score</td>
<td>19</td>
<td>0.34</td>
<td>16.56</td>
<td>0</td>
<td>31</td>
<td>5.92</td>
<td>35%</td>
</tr>
</tbody>
</table>

*At least 1 SD (+/- 2 SD) from database mean

Database selection criteria age +/- 6 months

Figure 10. Database Menu: Narrative Scoring Scheme for Dan at T5

His composite score on the NSS was 19 out of 35, which is within normal limits for his age. The individual scores for each category are also within normal limits for his age with the scores for Referencing (2) and Conclusion (2) being slightly below the database mean of 2.78 and 2.46 respectively.

Radu’s individual and composite scores are presented in Table 22.
Table 22

Radu’s NSS scores along with the composite scores for English unique story-telling

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>T3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>T4</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>T5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>21</td>
</tr>
</tbody>
</table>

Note. Intr. = Introduction; Character Dev. = Character Development; Ref. = Reference; Conflict Res. = Conflict Resolution; Coh. = Cohesion; Concl. = Conclusion; NSS = Narrative Scoring Scheme

Based on Table 22, Radu’s composite scores on the NSS steadily increased from T2 to T5 after a stagnation period from T2 to T3. His narrating skills were in the emerging range. Radu exhibited high scores from the very beginning for the Referencing category as well as the Mental States and Conflict Resolution. His individual scores for the Introduction, Character Development, Coherence and Conclusion increased over time.

Radu’s sample was compared to a database of age-matched children to assign specific performance levels using the following settings:

Database comparison criteria: based on entire transcript (entire story)

Database sample: 140 typical bilingual peers, ages 5;7-6;7, narrating unique story in English (One Frog Too Many – OFTW).

The SALT analysis is presented in Figure 11.
Radu’s composite score on the NSS was 21 out of 35 which is within normal limits for his age. The individual scores for each category are also within normal limits for his age all being slightly above the database mean. Moni’s individual as well as the composite scores are presented in Table 23.

**Table 23**

**Moni’s NSS scores along with the composite scores for English unique story-telling**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>T3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>T4</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>T5</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>18</td>
</tr>
</tbody>
</table>

*Note. Intr. = Introduction; Character Dev. = Character Development; Ref. = Reference; Conflict Res. = Conflict Resolution; Coh. = Cohesion; Concl. = Conclusion; NSS = Narrative Scoring Scheme*

Based on Table 23, Moni’s composite scores on the NSS steadily increased from T2 to T5 after a stagnation period from T2 to T3. Her individual scores showed a significant improvement from a minimal stage to an emerging one for the Mental States category (the most significant increase) as well as for the Character Development, and
Conclusion categories. Her scores for the Introduction, Reference and Coherence categories remained unchanged over the two year period of time. The scores for the Conflict Resolution category also improved but still remained in the minimal/emerging category.

Moni’s sample was compared to a database of age-matched children to assign specific performance levels using the following settings:

*Database comparison criteria:* based on entire transcript (entire story)

*Database sample:* 143 typical bilingual peers, ages 5;5 - 6;5, narrating unique story in English (*One Frog Too Many* – OFTW).

The SALT analysis is presented in Figure 12.

<table>
<thead>
<tr>
<th>NSS Category</th>
<th>Score</th>
<th>+/-SD</th>
<th>DATABASE</th>
<th>DATABASE</th>
<th>DATABASE</th>
<th>DATABASE</th>
<th>DATABASE</th>
<th>DATABASE</th>
<th>DATABASE</th>
<th>DATABASE</th>
<th>DATABASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>3</td>
<td>0.85</td>
<td>2.01</td>
<td>0</td>
<td>4</td>
<td>1.17</td>
<td>58%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CharacterDev</td>
<td>3</td>
<td>0.60</td>
<td>2.34</td>
<td>0</td>
<td>4</td>
<td>1.09</td>
<td>46%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MentalStates</td>
<td>3</td>
<td>0.35</td>
<td>2.59</td>
<td>0</td>
<td>5</td>
<td>1.19</td>
<td>46%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Referencing</td>
<td>2</td>
<td>-0.48</td>
<td>2.53</td>
<td>0</td>
<td>5</td>
<td>1.10</td>
<td>43%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ConflictRes</td>
<td>2</td>
<td>-0.01</td>
<td>2.01</td>
<td>0</td>
<td>5</td>
<td>1.10</td>
<td>55%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohesion</td>
<td>2</td>
<td>-0.04</td>
<td>2.64</td>
<td>0</td>
<td>5</td>
<td>1.08</td>
<td>53%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conclusion</td>
<td>3</td>
<td>0.55</td>
<td>2.29</td>
<td>0</td>
<td>5</td>
<td>1.30</td>
<td>57%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSS Score</td>
<td>18</td>
<td>0.34</td>
<td>15.81</td>
<td>0</td>
<td>31</td>
<td>6.43</td>
<td>41%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*At least 1 SD (** 2 SD) from the database mean

*Database selection criteria: age +/- 6 months

Figure 12. Database Menu: English Narrative Scoring Scheme for Moni at T5

Moni’s composite score on the NSS was 18 out of 35 which is within normal limits for her age. The individual scores for each category were also within normal limits for her age with the scores for the Referencing (2), Conflict Resolution (2), and Cohesion (2) categories being slightly below the database mean of 2.53, 2.01 and 2.04 respectively. In conclusion, the children showed constant improvement of their narrative skills over time in both Romanian and English. Their scores for both the Romanian NSS and the English NSS were within normal limits for their age when compared to other bilingual children.
4.3.2 Narrative Microstructure

4.3.2.1 Length/productivity

Productivity measures for both Romanian and English were generated using SALT. The productivity measures included number of C-units and number of total words for each story in each language (NTW). The results of the productivity measures for both languages are presented in Table 24.

Table 24
Summary of descriptive statistics for productivity measures for Romanian and English

<table>
<thead>
<tr>
<th>Child</th>
<th>Measure</th>
<th>Romanian</th>
<th></th>
<th></th>
<th>English</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>T1</td>
<td>T2</td>
<td>T3</td>
<td>T4</td>
<td>T5</td>
<td>T1</td>
</tr>
<tr>
<td>Dan</td>
<td>No. C-units</td>
<td>79</td>
<td>82</td>
<td>77</td>
<td>81</td>
<td>68</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>NTW</td>
<td>191</td>
<td>223</td>
<td>313</td>
<td>357</td>
<td>348</td>
<td>-</td>
</tr>
<tr>
<td>Radu</td>
<td>No. C-units</td>
<td>74</td>
<td>88</td>
<td>119</td>
<td>59</td>
<td>74</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>NTW</td>
<td>210</td>
<td>183</td>
<td>361</td>
<td>292</td>
<td>381</td>
<td>-</td>
</tr>
<tr>
<td>Moni</td>
<td>No. C-units</td>
<td>93</td>
<td>53</td>
<td>63</td>
<td>54</td>
<td>72</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>NTW</td>
<td>227</td>
<td>193</td>
<td>231</td>
<td>249</td>
<td>290</td>
<td>-</td>
</tr>
</tbody>
</table>

An analysis of the data presented in Table 24 reveals that over time all children either produced more utterances or increased the number of words they used to tell the stories for both Romanian and English. The data also shows that they produced more words in English than in Romanian.

Figure 13 summarizes the growth trajectories for NCU and TNW in Romanian and English. According to this all three children went through periods of growth followed by periods of either stagnation or attrition.
(a) NCU – Romanian

(b) NTW – Romanian
One of the questions in the study was whether or not the children lag behind in their knowledge of English once they complete SK. In order to answer this question, the English samples were compared to databases of age-matched peers to assign age specific performance levels using the same settings as the ones described in section 4.2.1.1 for
each child. Table 25 presents the productivity standard measures report as produced by SALT at T5.

**Table 25**

*Productivity report compared to the database*

<table>
<thead>
<tr>
<th>Child</th>
<th>Lg.M</th>
<th>Score</th>
<th>+/- SD</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan</td>
<td>NCU</td>
<td>83**</td>
<td>3.52</td>
<td>35.72</td>
</tr>
<tr>
<td></td>
<td>NTW</td>
<td>474**</td>
<td>2.79</td>
<td>94.58</td>
</tr>
<tr>
<td>Radu</td>
<td>NCU</td>
<td>55*</td>
<td>1.43</td>
<td>5.54</td>
</tr>
<tr>
<td></td>
<td>NTW</td>
<td>332*</td>
<td>1.35</td>
<td>192.34</td>
</tr>
<tr>
<td>Moni</td>
<td>NCU</td>
<td>82**</td>
<td>3.04</td>
<td>35.38</td>
</tr>
<tr>
<td></td>
<td>NTW</td>
<td>451**</td>
<td>2.54</td>
<td>180.31</td>
</tr>
</tbody>
</table>

*Note.* Lg. M = Language Measure; NCU=Number of c-units; NTW=Number of total words. Note: *At least 1SD (** 2SD) from the database mean.

As evident in Table 25, Dan and Moni’s NCU and NTW scores are 2 SD above the database mean while Radu’s NCU and NTW scores are 1 SD above database mean.

**4.3.2.2 Lexicon**

Two dependent variables were selected to quantify the lexical knowledge of the children: the number of different words (NDW) as well as the type/token ratio. Table 26 presents a summary for the two lexical measures examined.
Table 26

Summary table for Romanian and English NDW and Type/Token Ratio

<table>
<thead>
<tr>
<th>Child</th>
<th>Lg. M.</th>
<th>Romanian</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>T1  T2  T3  T4  T5</td>
<td>T1  T2  T3  T4  T5</td>
</tr>
<tr>
<td>Dan</td>
<td>NDW</td>
<td>94  112 139 152 139</td>
<td>-  85 113 131 142</td>
</tr>
<tr>
<td></td>
<td>TTR</td>
<td>0.49 0.50 0.44 0.43 0.39</td>
<td>- 0.35 0.37 0.30 0.30</td>
</tr>
<tr>
<td>Radu</td>
<td>NDW</td>
<td>114  89 159 100 158</td>
<td>- 126 94 205 99</td>
</tr>
<tr>
<td></td>
<td>TTR</td>
<td>0.54 0.49 0.58 0.34 0.41</td>
<td>- 0.28 0.28 0.27 0.30</td>
</tr>
<tr>
<td>Moni</td>
<td>NDW</td>
<td>97  86 99 100 118</td>
<td>- 65 62 103 130</td>
</tr>
<tr>
<td></td>
<td>TTR</td>
<td>0.43 0.45 0.43 0.40 0.41</td>
<td>- 0.36 0.42 0.29 0.29</td>
</tr>
</tbody>
</table>

*Note.* Lg. M. = Language Measure; NDW = Number of different words; TTR = Type Token Ratio

Before presenting the results for the two measures used to quantify the lexical knowledge, an important observation must be made. TTR is one of the most used measure of lexical diversity, but one that has a major drawback: it is sensitive to the length of the text analyzed (Koizumi, 2012; Malvern, Richards, Chipere & Duran, 2004). In order to compare TTR values across languages or between different points in time, the text length should be controlled for. Since this is not possible in this study, as an analysis of the entire transcripts is needed to fully capture the children’s lexical knowledge, interpretation of the results should be done cautiously in order to avoid irrelevant variances between children or languages and misleading results.

Table 26 reveals that the number of different words that Dan used to tell the stories increased for both Romanian and English over the 2 year period of time. Although Dan’s scores for the type token ratio measure were higher for Romanian than for English, it cannot be interpreted that Dan’s Romanian vocabulary is more diversified than the English one. However, at T3 the TTR values for Romanian are higher than for English while the total number of words is also higher for Romanian than for English. The
findings seem to suggest that the vocabulary Dan used to tell the stories in Romanian is more diversified than that for English at least at T3.

Based on Table 26, Radu’s NDW scores increased for Romanian over the 2 year period of time. The English NDW presents a mixed profile: it decreased from T2 to T3 and from T4 to T5 but it increased from T3 to T4. An important observation is that at T3 and T5, Radu’s TTR scores for Romanian are higher than for English while the TNW for the Romanian narratives are lower than for the English narratives, suggesting that Radu’s lexical diversity is higher for Romanian than for English.

Moni’s NDW scores for both Romanian and English story telling increased over the two-year period of time (Table 26). Moni’s TTR scores at T2 and T3 are higher for Romanian than for English while the TNW for Romanian is higher than for English at both points in time. This may suggest that Moni is using a more diverse Romanian vocabulary to narrate the stories at T2 and T3.

To sum up, all three children increased their NDW scores over time with Radu displaying a mixed behavior for the English NDW with its values decreasing at T3 and T5. Also, it is possible that the children exhibited a higher lexical richness for Romanian at T3, with Radu and Moni also displaying this pattern at T5 and T2 respectively.

The English data was compared to databases of age-matched peers to assign age specific levels using the same settings reported in the Length/Productivity section. Table 27 presents the lexical standard measures report as produced by SALT.
Table 27
*Database Menu: Scores for the Lexical Standard Measures*

<table>
<thead>
<tr>
<th>Child</th>
<th>Lg.M</th>
<th>Score</th>
<th>+/- SD</th>
<th>Database M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan</td>
<td>NDW</td>
<td>142**</td>
<td>4.49</td>
<td>54.39</td>
</tr>
<tr>
<td></td>
<td>TTR</td>
<td>0.30</td>
<td>-0.16</td>
<td>0.32</td>
</tr>
<tr>
<td>Radu</td>
<td>NDW</td>
<td>99**</td>
<td>2.35</td>
<td>53.51</td>
</tr>
<tr>
<td></td>
<td>TTR</td>
<td>0.30</td>
<td>-0.19</td>
<td>0.32</td>
</tr>
<tr>
<td>Moni</td>
<td>NDW</td>
<td>130**</td>
<td>3.81</td>
<td>51.36</td>
</tr>
<tr>
<td></td>
<td>TTR</td>
<td>0.29</td>
<td>-0.39</td>
<td>0.34</td>
</tr>
</tbody>
</table>

*Note.* Lg. M = Language Measure; S=Scores; NDW=Number of different words; TTR=Type/token ratio.

Note. *At least 1SD (** 2SD) from the database mean.*

Results for the lexical measures (see Table 27) suggest that when compared to age-matched peers, the children in the present study produce higher NDWs than their bilingual Spanish counterparts from the SALT database but comparable scores for the type/token ratio measure. All three children’s NDW scores are 2 SD above the database mean. Their TTR scores are slightly lower than the database mean but still within the limits.

4.3.2.3 Morphosyntactic Knowledge in Romanian

Three dependent variables were selected to quantify the morphosyntactic knowledge of the children. The outcome measures were generated from the narrative language sample transcripts in each language using SALT Research 2010 software (Miller & Iglesias, 2010): (i) mean length of utterance in words and morphemes (MLUw Romanian; MLUm Romanian; MLUw English); (ii) syntactic index (SI).

The MLUw and MLUm as well as the SI values for the Romanian narratives are presented in Table 28.
Table 28

MLUw, MLUm and SI values

<table>
<thead>
<tr>
<th>Child</th>
<th>Lg. M.</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan</td>
<td>MLUw</td>
<td>2.58</td>
<td>2.79</td>
<td>4.09</td>
<td>4.40</td>
<td>5.16</td>
</tr>
<tr>
<td></td>
<td>MLUm</td>
<td>3.34</td>
<td>3.29</td>
<td>5.01</td>
<td>5.60</td>
<td>6.96</td>
</tr>
<tr>
<td></td>
<td>SI</td>
<td>1.07</td>
<td>1.17</td>
<td>1.18</td>
<td>1.17</td>
<td>1.17</td>
</tr>
<tr>
<td>Radu</td>
<td>MLUw</td>
<td>2.88</td>
<td>2.09</td>
<td>3.13</td>
<td>4.95</td>
<td>5.16</td>
</tr>
<tr>
<td></td>
<td>MLUm</td>
<td>3.62</td>
<td>2.89</td>
<td>4.04</td>
<td>6.24</td>
<td>6.72</td>
</tr>
<tr>
<td></td>
<td>SI</td>
<td>1.05</td>
<td>1.19</td>
<td>1.15</td>
<td>1.17</td>
<td>1.23</td>
</tr>
<tr>
<td>Moni</td>
<td>MLUw</td>
<td>2.54</td>
<td>3.70</td>
<td>3.67</td>
<td>4.56</td>
<td>4.06</td>
</tr>
<tr>
<td></td>
<td>MLUm</td>
<td>3.26</td>
<td>4.70</td>
<td>4.83</td>
<td>5.83</td>
<td>5.49</td>
</tr>
<tr>
<td></td>
<td>SI</td>
<td>1.05</td>
<td>1.14</td>
<td>1.13</td>
<td>1.21</td>
<td>1.10</td>
</tr>
</tbody>
</table>

Note. Lg.M. = Language Measure

The SI scores increased for all three children from T1 to T5. Dan’s SI scores increased from 1.07 at T1 to 1.17 at T2 and remained almost constant throughout the entire period of data collection. Radu’s SI scores also increased from 1.05 at T1 to 1.19 at T2 and remained almost the same (1.15 at T3 and 1.17 at T4) until T5 when they increased considerably (1.23). Moni’s SI scores also increased from 1.05 at T1 to 1.14 at T2 and remained stable throughout the T3 (1.13) of data collection, after which they increased to 1.21 at T4 and dropped to 1.10 at T5. To summarize, at the beginning of the study, all three children exhibited limited command of complex syntax, most of their utterances containing one clause. Towards the end of the study, data from all three children provide evidence of a slightly more sophisticated syntax with children producing approximately 2 subordinated clauses every 10 utterances.

Both the MLUw and MLUm values were low at both T1 and T2 which warranted further investigation. To investigate whether the low MLUw indicated a language-based issue or it may have been due to reticent and therefore limited speech production, the children’s MLUw was compared with that of the examiner’s MLUw. When MLUw values are low, it is always good practice to check on the examiner’s language as it
should be equal to, or less complex than, the target speaker (Miller & Iglesias, 2012). Figures 14 (a), 15 (b) and 15 (c) compare the children’s MLUw with that of the examiner’s.

(a) Dan

(b) Radu
Figure 14. Comparison of MLUw and the examiner’s MLUw (a) for Dan; (b) for Radu; and (c) for Moni

As evident in Figures 14 (a), 14 (b) and 14 (c), the examiner’s language was much higher and more complex than the children’s language at T1 and T2. At T3, Dan’s MLUw increased significantly while the examiner’s MLUw decreased and the trend maintained throughout the entire period of data collection with the examiner’s MLUw scores being slightly under Dan’s scores. Radu’s MLUw continued to remain low at T3 while the examiner’s MLUw remained higher but at T4 and T5 Radu’s MLUw scores were higher than the examiner’s. Moni’s MLUw scores remained lower than those of the examiner’s until T4 of data collection when they become higher only to be almost equal with the examiners at T5.

In conclusion, while the children’s lower MLUw scores for the first rounds of data collection could still be attributed to a language problem, it is very likely to be in conjunction with their reticence to or lack of knowledge about how to narrate the story which led the examiner to ask a lot of questions and offer a lot of prompts in order to elicit speech – hence the examiner’s higher MLUw scores. As a result, the children produced shorter samples with sparse vocabulary and elemental syntax. Often the utterances were one or two-word answers to the examiner’s questions. Due to the fact
that the discourse properties seemed to have influenced the scores, further investigation was conducted. Utterances likely to reflect the discourse biased were removed and a new MLUw (MLUw New) score was obtained for each child and each round of data collection. The utterances removed met the following criteria (adapted from Johnston, 2001): Imitations (repetition of the examiner), Yes/No answers to questions (Examiner: “Do you see anything else in the picture?” Child: “Yes”), as well as one word answers in response to “Wh” questions (Examiner: “Where is the boy?” Child: “Here”). The results are presented in Table 29.

Table 29

<table>
<thead>
<tr>
<th>Child</th>
<th>Lg. M.</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan</td>
<td>MLUw New 3.39</td>
<td>3.86</td>
<td>5.25</td>
<td>5.04</td>
<td>5.35</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MLUm New 4.43</td>
<td>4.72</td>
<td>6.39</td>
<td>6.49</td>
<td>7.18</td>
<td></td>
</tr>
<tr>
<td>Radu</td>
<td>MLUw New 3.69</td>
<td>2.79</td>
<td>3.74</td>
<td>5.76</td>
<td>5.46</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MLUm New 4.67</td>
<td>3.77</td>
<td>4.80</td>
<td>7.24</td>
<td>7.12</td>
<td></td>
</tr>
<tr>
<td>Moni</td>
<td>MLUw New 3.51</td>
<td>4.33</td>
<td>4.23</td>
<td>5.09</td>
<td>4.61</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MLUm New 4.49</td>
<td>5.53</td>
<td>5.52</td>
<td>6.49</td>
<td>6.20</td>
<td></td>
</tr>
</tbody>
</table>

*Note. Lg.M. = Language Measure*

The initial MLUw ranged between 2.09 to 6.16 across the children. The alternate calculation procedures resulted in an average of 4.57 for Dan, 4.28 for Radu and 4.35 for Moni in the MLUw scores with individual samples increasing as little as 3% and as much as 38%. The MLUw New values are significantly longer than the initial values which reinforces the fact that, in addition to being reticent to produce speech, children produced a significant number of one word utterances as responses to questions which limited the verbal output.
4.3.2.4 Morphosyntactic knowledge in English

The SI values for the English narratives are presented in Table 30.

**Table 30**

*SI values for English narratives*

<table>
<thead>
<tr>
<th>Child</th>
<th>Lg. M.</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan</td>
<td>SI</td>
<td>1.09</td>
<td>1.08</td>
<td>1.12</td>
<td>1.13</td>
</tr>
<tr>
<td>Radu</td>
<td>SI</td>
<td>1.05</td>
<td>1.02</td>
<td>1.16</td>
<td>1.11</td>
</tr>
<tr>
<td>Moni</td>
<td>SI</td>
<td>1.04</td>
<td>1.00</td>
<td>1.15</td>
<td>1.04</td>
</tr>
</tbody>
</table>

*Note. Lg.M. = Language Measure; SI=Syntactic Index*

In Figure 15 the children’s SI scores for the English narratives are plotted at each round of data collection.

![Figure 15. SI curves for the English narratives](image)

*Figure 15. SI curves for the English narratives*

The shapes of the SI curves reveal that all three children’s SI values increased over the two year period. Dan’s SI growth was more gradual than the other children’s growth starting with the highest SI score of 1.09 at T2 and ending with an SI score of 1.13 at T5. Radu and Moni exhibit similar behaviour. Radu’s SI at T2 was 1.05 and it
declined twice over the two year period of time, once at T3 when Radu’s SI score dipped to 1.02 and the second time at T5 when it decreased from 1.16 at T4 to 1.11 at T5. Moni’s SI curves are remarkably similar to those of Radu’s. She started with an SI of 1.04 at T2 and the value declined twice from T2 to T5. Thus, Moni’s SI values decreased to 1.00 at T3, sharply increased to 1.15 at T4 only to decline again to 1.04 at T5. In sum, all three children’s SI values increased over the two years of data collection but exhibited different growth rates; one child (Dan) showed steady growth while the other two children showed growth with periods of decline over the two-year period.

The MLUw curves for the English narratives are presented in Figure 16.

![MLUw Curves](image)

*Figure 16. MLUw curves for the English narratives*

Figure 16 reveals that Dan’s MLUw for the English narratives steadily increased from T2 to T5 of data collection. He went from an MLUw of 4.88 at T2, to an MLUw of 6.46 at T5. Radu’s MLUw also increased from T2 to T5 but with variations between the data collections. Thus, Radu started at T2 with an MLUw of 5.42 only to dip back to 4.22 at T3 and then to experience steady increase throughout the rest of the study. Radu’s MLUw at T4 was 5.87 and at T5 it was 6.47. Moni exhibited a similar behaviour with Dan. She started with an MLUw of 4.59 at T2 and steadily improved it by the end of the study obtaining an MLUw of 5.71 at T5.

In sum, there is mixed behaviour within children’s performance. Although the MLUw English data showed different developmental patterns for the three children, they
all improved their MLUw from T2 to T5 of data collection, achieving a normal rate of development. One child (Radu) showed decline at T3 and two children (Dan and Moni) showed steady development over the two years they were followed, with Moni showing a slower development.

One of the questions in the study was whether or not the children lag behind in their knowledge of English once they complete SK. In order to answer this question, the English samples were compared to databases of age-matched peers to assign age specific performance levels using the same settings as the ones described in section 4.2.1.1. Table 3 presents the productivity standard measures report as produced by SALT at T5.

**Table 31**

*Productivity report compared to the database*

<table>
<thead>
<tr>
<th>Child</th>
<th>Lg.M</th>
<th>Score</th>
<th>+/- SD</th>
<th>Database Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan</td>
<td>SI</td>
<td>1.13</td>
<td>0.90</td>
<td>1.09</td>
</tr>
<tr>
<td></td>
<td>MLUw</td>
<td>6.45</td>
<td>0.17</td>
<td>6.25</td>
</tr>
<tr>
<td>Radu</td>
<td>SI</td>
<td>1.04</td>
<td>0.35</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>MLUw</td>
<td>5.16</td>
<td>-0.87</td>
<td>6.18</td>
</tr>
<tr>
<td>Moni</td>
<td>SI</td>
<td>1.23</td>
<td>1.96</td>
<td>1.01</td>
</tr>
<tr>
<td></td>
<td>MLUw</td>
<td>5.71</td>
<td>-0.16</td>
<td>5.91</td>
</tr>
</tbody>
</table>

*Note.* Lg. M = Language Measure; NCU=Number of c-units; NTW=Number of total words. Note: *At least 1SD (** 2SD) from the database mean.

According to Table 31 all three children’s SI and MLUw scores are within normal limits for their age when compared with age-matched bilingual children.

**4.3.3 Bilingualism: Code-switching**

Code-switching, the use of Romanian in English narratives or English in Romanian narratives, was explored by counting the frequency and the proportion of code-switching. The data are summarized in Table 32.
Table 32

Frequency and proportion of code-switching in Romanian and English narratives

<table>
<thead>
<tr>
<th>Child</th>
<th>Lg.M</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>R</td>
<td>E</td>
<td>R</td>
<td>E</td>
<td>R</td>
</tr>
<tr>
<td>Dan</td>
<td>Freq.</td>
<td>2</td>
<td>-</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Prop.</td>
<td>0.01</td>
<td>0.03</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Radu</td>
<td>Freq.</td>
<td>0</td>
<td>-</td>
<td>6</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Prop.</td>
<td>0</td>
<td>0.03</td>
<td>0</td>
<td>0.02</td>
<td>0</td>
</tr>
<tr>
<td>Moni</td>
<td>Freq.</td>
<td>0</td>
<td>-</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Prop.</td>
<td>0</td>
<td>0.005</td>
<td>0</td>
<td>0.004</td>
<td>0</td>
</tr>
</tbody>
</table>

Note. Lg. M. = Language Measure; Freq. = Frequency; Prop. = Proportion.

The proportion of code-switching show very few instances when the children switched to the other language, with more L1 (Romanian) to L2 (English) code-switching and with the vast majority of code-switches centering on nous and noun-phrases. A total of 31 instances of code-switching emerged in the 5 narratives produced by Dan in Romanian and no instances of use of Romanian in the English narratives were encountered in Dan’s narratives. Of the 31 instances, 1 involved a noun-onomatopoeia (ribbit), 3 were nouns adapted to the Romanian language (“nata” from net for “plasa”; “bacheta” from bucket for “galeată”; “botel+ul” from bottle for “sticlă”), 3 were adjectives (grumpy, sad, happy), 16 were nouns (coffee, tea, dinner, restaurant, diamonds, picture, police, band, horn, drum, sticks, boyfriend, family, room, bedroom, exit), one instance of reading from the pictures (trash here) and the rest were chunks and were counted as one instance each (actually “un” bad guy = actually a bad guy; “stau” beside each other = stay beside each other; fire exit; because he doesn’t look like a police). When asked if he knew the Romanian equivalents for the English words, Dan either offered the Romanian counterpart or explained further in English.

(9)  
C: Se duc la dinner [CS]. {They are going to dinner}  
C: Se pregătesc pentru dinner [CS]. {They get ready for dinner}  
E: Ce-nseamnă dinner? {What is dinner?}  
C: Restaurant [CS]? {Restaurant?}
**E:** Ce inseamnă restaurant? \{What is restaurant?\}

**C:** Înseamnă *ca se duc la bere.* \{It means that they are going to a beer\}

(Dan - T4)

The above example is evidence that the code switching produced was because Dan encountered a word that he could not remember or did not know the Romanian equivalent for it. Other times, Dan knew the Romanian word but chose to use the English one instead:

(10) **E** La ce cantă nenea acesta? \{What is this gentleman singing at?\}

**C** la un horn \{CS\}. \{At a horn\}

**E** Si ce aca horn? Stii cuvantul in romaneste? \{And what is a horn? Do you know the word in Romanian?\}

**C** Da. Trompetă \{SI-X\}. \{Yes, trumpet\}

(Dan - T4)

In a different instance, Dan used an expression that reflected that he had learned it as a chunk most likely in school but he was unclear about its meaning:

(11) **C** Ia broasca și o pune în fire exit \{CS\}. \{He takes the frog and puts it in the fire exit\}

**E** Ce-i ăla fire exit? \{What is a fire exit?\}

**C** Adică e foc în ușa aia. \{It means there is fire in that door\}

**E** E foc in ușa aia? \{There is fire in that door?\}

**C** Da și aici toată familia zice dă/-mi broasca înapoi! \{yes, and here the whole family says: Give me the frog back!\}”

(Dan - T4)

In a different instance, Dan used the adjectives **grumpy** and **sad** to describe how the characters felt. When asked what they meant in Romanian, he used the same word for both “supărat” which actually means **upset** in English, showing a gap in knowledge related to Romanian vocabulary.

A total of 23 instances of code-switching emerged in the 5 narratives produced by Radu in Romanian and no instances of use of Romanian in the English narratives were encountered in Radu’s English narratives. Of the 23 instances, 13 involved nouns (**net, branch, water, tracks, lily pads, waiter, lake, hat, boat, ribbons, forest, dog, present**), 3
were adjectives (*angry, difficult, silly*), 2 were reading instances from the pictures (*fire exit, fancy restaurant*) and 4 were chunks or expressions that replaced more than just one word and were counted as 1 instance each (*frog waved his hand, picnic basket, hot chocolate, go away*).

The reason for code switching in Radu’s case was often the lack of knowledge of the Romanian counterparts.

(12)  
_E Și unde sunt ei? {And where are they?}_
_C În un lake [CS]. {In a lake.}_
_E Cum îi zice în româneste? {How do you say in Romanian?}_
_C Nu mai ştiu. {I don’t remember.}_

(Radu – T3)

(13)  
_C Și s-a-/mpiedicat de asta {points to book}. {And he tripped over this one}_
_E Ce-I ăla? {What’s that one?}_
_C (br*) un branch [CS]. {A branch}_
_E Un branch...adică? {A branch...meaning?}_
_C Nu ştiu. {I don’t know}_

(Radu – T2)

(14)  
_E Si ce are in mâna băiețelul? {And what does the little boy have in his hand?}_
_C Găleta. {Bucket – a wrong form in Romanian}_
_E Gâleata. {Galeata}_
_C Și net [CS]. {And net}_
_E Ce-i ala net? {What is net?}_
_C Nu stiu. {I don’t know.}_

(Radu – T2)

After Radu is told the Romanian word for “net”, a few instances later, he needed to use the word again but failed to remember the word:

(15)  
_E Ce-a zburat în aer? {What flew through the air?}_
_C Găleata. {The bucket}_
_E Și? {And?}
In other instances, Radu expressed his struggle to say the story in Romanian and used English:

(16)  
E Și ce face băiatul aicea? {And what does the boy do here?}  
C Eu nu prea știu. {I really don’t know}  
C Ăsta-i un pic difficult [CS]. {This is a little bit difficult}  

(Radu – T3)

(17)  
E Ce-a făcut broșcuța? {What did the frog do?}  
C Broșcuța...uuhm...am uitat. {The frog...uhhhm...I forgot}  
E Ai uitat ce? {What did you forget?}  
C Am uitat cum zice. {How you say it}  
E Gandește-te...ce-a făcut broșcuța aici? {Think about it...what did the little frog do?}  
C Broșcuța uuuhm... am uitat. {The little frog...uuuhhm, I forgot}  
E Dar in ce limba știi tu să zici? {In what language can you tell me?}  
C Engleză. {In English}  
E Cum zici in engleză? {How do you say in English?}  
C Frog waved his hand [CS]. {Frog waved his hand}  

(Radu – T5)

In only one instance, when asked to provide the Romanian equivalent for the English word was, Radu did that, although they were not entirely equivalents.

(18)  
E Da cum e băiatul? {How is the boy?}  
C Angry [CS]. {Angry}  
E Adica cum îi zice in românăse? {How do you say in Romanian?}  
C Supărăt? {Upset}  

(Radu – T2)

An analysis of Moni’s code switching revealed a total of 15 instances of code-switching that emerged in the 5 narratives produced in Romanian and 2 instances of code
switching (the same word) from Romanian to English in the English narratives. Of the 15 instances, 2 were nouns adapted to the Romanian language (“froaga” from frog for “broască”; boatu’ from boat for “barcă”), 1 was an adjective (funny), 1 adverb (no), 1 was a verb (park), 5 were nouns and compounds (turtle, butterfly, car park, basket, sail boat), one instance of reading from the pictures (no swimming) and 1 expression (that’s my frog). In most of the instances where Moni code switched, when asked what the Romanian translation was, she could not provide the Romanian equivalent but tried to explain the meaning either in Romanian (see 19) or in English (see 20).

(19)  
E Pe ce stă ea? {What does she stay on – meaning the frog}
C Pe o [EW:un] lemn de (froaga) [CS] . {On a “froaga” wood – meaning a lily pad}
E Pe ce? {On what?}
C Pe un|o de aia care stă la suprafață. {On a thing that stays on the surface}

(Moni – T2)

(20)  
E Stii unde sunt? {Do you know where they are?}
C Îhi. {ihi}
E Unde? {Where?}
C Car park [CS]. {Car park}
E Unde? {Where?}
C Car park [CS]. {Car park}
E Car park? Ce-I ăla car park? {Car park? What is a car park?}
C Unde park [CS] cars [CS]. {Where park cars}.

(Moni – T5)

In only one instance she offered the Romanian equivalent.

(21)  
E ...zi-mi tot ce vezi tu aici în poză. {…tell me everything you see in this picture}
C ....și cățel și butterfly [CS]. {…and dog and butterfly}
E Și cățel și? {And dog and?}
C Butterfly [CS]. {Butterfly}
E Ce-i ala? {What is that?}
The two instances of code switching from English to Romanian in Moni’s English narratives manifested when she did not know the English equivalent but she knew the Romanian equivalent. The word was used twice throughout the narration.

(22) 
E What is the mother doing?
C She/’s break/ing the thing in the turtle’ mouth.
E What thing? What’s that?
C In the beberon [CS]. {in the bottle nipple}
E In the beberon? {in the bottle nipple?}
C Yes, and the baby’s kinda’ of mad.
E Why?
C Because the frog took the beberon [CS]. {Because the frog took the bottle nipple}

To further analyze the lack of code switching at the lexical level in the English narratives, a qualitative analysis was performed. The analysis revealed that there were more subtle influences that Romanian exerted on English that were not at a lexical level but rather at a morphosyntax level (preposition choice, word order, subject drop). The following examples are illustrative of that.

(23) Sir, did you see a frog in [EW: on] the plate? (Radu–T4) - preposition
(24) They are at [EW: by] his bed (Dan–T3) - preposition
(25) I don’t know really what is this. (Radu – T4) –word order
(26) And he tried to look behind the branch to see what is that. (Radu – T2) – word order

(27) I don’t know really what is this.. (Radu, T4) – word order
(28) Frog waved his hand (Radu – T5) – no definite article.
(29) Examiner: What are they doing? Child: Going. (Radu, T2) subject drop
(30) The boy is standing on the bench. (Dan – T5) – word choice (sitting)
(31) *And he saw the footprint and he left after them.* (Dan-T2) – word choice
The influence of languages is bidirectional with English also exerting influence on Romanian at the morphosyntax level:

(32) *Au un picnic* (Dan, T5) – (word choice – Should be: “Fac un picnic” – *they make* a picnic)

(33) *Aici ăsta cred că sare în* (Dan, T5) – preposition typical for English (should be “*inauntru*” = *inside*)

(34) *A (sar) sărit în* (Moni, T4) - preposition typical for English (should be “*inauntru*” = *inside*)

(35) *El s-a dus în* (Moni, T5) – preposition typical for English (should be “*inauntru*” = *inside*)

(36) *Cana cu hot chocolate [CS] sau ce este în* (Radu, T5) - preposition typical for English (should be “*inauntru*” = *inside*)

(37) *Și după aceea broșcuță o sărit ... vroia să sara în... o sărit în vaporaș.* (Radu, T5) - preposition typical for English (should be “*inauntru*” = *inside*)

(38) *C Și după aceea el nu mai putea să face muzică că broasca o mers în* (Radu, T4) - preposition typical for English (should be “*inauntru*” = *inside*)

In summary, data on code switching measures reveal that all three children code switched in the Romanian narratives using either isolated English words or complete English utterances to narrate their stories. When they code switched, they either did not know the Romanian equivalents (mostly for the isolated words) or they just preferred the English language (mostly for the chunks or complete utterances). The overwhelming majority of code-switches centered on nouns and noun phrases. The data on the code switching in English narratives showed that Dan and Radu never code-switched while Moni only did that twice with the same noun.

The current chapter presented the results of the study for the parents’ questionnaire as well as for the language tasks and for the picture book tasks. The next chapter will offer a discussion of the findings, as well as an account of the study’s limitations.
Chapter 5: Discussion

The overall goal of the present study was to determine under what conditions a first language can be maintained and, if there is any loss, which areas of linguistic knowledge are more prone to loss: lexical, syntactic, phonological or discourse. Furthermore, the study examined the acquisition of the children’s L2, in this case, English, and the impact that having an L1 already had on their proficiency in the L2 during the preschool years. These questions were explored through both quantitative and qualitative methods. To date, there has been no formal research that describes the language situation of bilingual Romanian-English children in Canada. Additionally, there is little systematic research employing a combination of psycholinguistic and sociolinguistic approaches in which one takes into account the micro and macro contexts within which the bilingual children grow up (see DeHouwer, 2009). Furthermore, there are even fewer in-depth case studies that pay attention to various factors that are recognized as shaping the linguistic profile of minority language children, for instance, travel history, amount of input, type of interactions, and type of schooling.

This chapter discusses parents’ attitudes towards language maintenance and the strategies they adopt since family environment is indispensable to additive bilingualism. Then, for the purpose of summarizing the linguistic profiles of each child, the discussion moves to minority language development in terms of vocabulary, morphology, phonology and pragmatics in order to get an overall picture of the success of the bilingual experiment. The last part of the discussion focuses on the development of English, and the influence the home language has on it. The chapter ends with a discussion of the limitations of this study.

The findings are discussed in light of the theoretical framework proposed by Cook (1991). Cook’s notion of multicompetence has served to frame recent research on bilingualism and multilingualism and “allows us to theorize the interaction between multiple languages in the speaker’s mind as a natural and ongoing process and to understand why multilinguals may perform differently from monolinguals in all of their languages, including the L1.” (Jarvis & Pavlenko, 2008, p.17). The children in the present study are multicompetent users of both Romanian and English. The results generally demonstrate that all three children continue to develop their minority language along with
the majority language. However, the lack of schooling in Romanian leads to slow progress in terms of academic Romanian vocabulary and possibly in terms of Romanian narrative skills. Two years of schooling in English narrows the gap between the children and the monolingual counterparts, with children mostly showing English language skills at par with those of the monolingual children.

5.1 The Family Environment

It has been emphasized in the literature that in order to discover what makes the difference between harmonious and unsuccessful bilingual acquisition, a focus on the child’s family environment and its social settings is imperative (De Houwer, 2009, Okita, 2002).

The children involved in this study were all born in Canada and grew up in families that, having Romanian as the first and dominant language, shared the same linguistic identity. The children’s initial interactions and contacts were with the family members and peers who spoke Romanian to them. Until the age of 4, they had contact with the societal language through limited media exposure and on the playground while interacting with other English speaking children. At the age of 4 all three children started attending kindergarten, which brought a major change in their linguistic soundscape (De Houwer, 2009), with the societal language gaining importance and frequency. It is precisely this change that has been mentioned in the literature as being drastic and possibly leading to a heritage language loss. Many experts have suggested that the impact schooling in the dominant language has on the child’s heritage language depends to a great extent on the parents’ attitudes towards the heritage language as well as the discourse strategies that parents use (De Houwer, 2009; Juan-Garau & Perez-Vidal, 2001; Kasuya, 1998).

5.1.1 Parental expectations and language attitudes

An important preliminary condition for successful bilingual acquisition is positive parental attitudes towards bilingualism and multilingualism (De Houwer, 2009). The parents of the children in the present study had high expectations for their children when it came to languages in general and Romanian in particular.
The parents expressed various reasons for wanting their children to speak and continue to develop the heritage language. The language was viewed as the venue for transmitting the culture and the traditions as well as the means of communication with the extended family. The Romanian culture values extended family relationships and grandparents usually play an important role in parenting the children. The ability to communicate with the immediate and extended family through the heritage language has been mentioned in the literature as being important for maintaining strong and healthy relationships in immigrant families (Wong Fillmore, 1991).

Another reason mentioned by the parents for helping their children learn and maintain the heritage language was related to the academic benefits that are attached to speaking other languages. This is in line with Cummins’ argument (1989) that a strong foundation in minority children’s first language enhances their second language learning and their academic skills.

Despite popular belief, the parents in this study did not show concern about their children lagging behind monolingual English children, mentioning that they are ready to give their children extra support with English in school if needed. The parents gave equal importance to English, mentioning that no matter how well the children will speak Romanian, there was no option of not mastering English, as proficiency in English is a necessary condition for success in the Canadian society. A positive attitude towards both L1 and L2 has been mentioned in the literature as being a prime condition for successful L1 maintenance (Chumak-Horbatsch, 2008).

5.1.2 Parental General Strategies

With regards to general strategies employed by parents in order to foster and encourage the maintenance of the heritage language, a few patterns emerged throughout the discussions and the interview I conducted with the parents at the beginning of the study. First, all three families read to their children in Romanian every day, a strategy that is shown as encouraging word learning (Patterson, 2002). One downside with this strategy, mentioned by all three families, was the difficulty finding resources in Romanian that could help their children. The families in the present study rely solely on the resources that they bring with them from their trips to Romania, mentioning a scarcity
of materials in the public libraries, schools or community centers. The parents supplemented book reading with Romanian cartoons and movies. Moni’s parents employed an interesting variation of this strategy. They report that first, Moni watches the movie/cartoon in Romanian and then they play the English version, with Moni preferring the Romanian version however.

Another important strategy used by the parents was taking the children on annual trips to Romania where the children were exposed to a flood of input in Romanian and where the English input stopped

5.1.3 Parental Discourse Strategies

It is widely recognized that once the children start attending school, the school language “takes over” and the children might stop either using or developing in their home language. The degree to which this happens, however, depends on a number of factors, one of them being the discourse strategies used by the parents (De Houwer, 2009). Lanza (1997) identifies five discourse strategies that parents use in their interactions with their children: minimal grasp strategy, expressed guessed strategy, repetition, move on strategy and language switch. The discourse strategies employed by parents to encourage their children to use Romanian in the home range from the most monolingual strategy (minimal grasp strategy) to the most bilingual strategy (language switch). At the beginning of the study all parents mentioned using just bilingual strategies, but in reality, during the duration of the study (as it appears in the recorded monthly conversations with their children), the parents employed both monolingual and bilingual strategies. Radu’s and Moni’s parents appeared to be more firm in maintaining a “Romanian only” policy in the home environment, while Dan’s parents were more accepting of Dan’s mixed utterances. It has been observed that if the children frequently produce mixed utterances and participate in “dilingual conversations” (De Houwer, 2009), they generally end up speaking only the school language after a while (De Houwer, 2009; Schecter & Bayley, 1997). Therefore, it is of utmost importance for the parents to use the right strategy that would benefit their children’s development of heritage language.
Overall, the findings suggest that the families show a positive attitude towards languages in general, employ strategies meant to lead to successful heritage language maintenance and provide their children with a rich input in Romanian, all mentioned as crucial factors for successful heritage language maintenance (De Houwer, 2009). However, the findings also suggest that while the parents are proactive in certain ways with regard to employing strategies, they are less so in others, pointing to the fact that there is a discrepancy between their attitudes and actions (Ajzen, 1988). Neither of the families registered their children in the free heritage language programs offered by the boards of education, despite the importance of schooling to maintaining the language skills in minority speaking children (Montrul, 2013; Wright, Taylor & Macarthur, 2000). However, it should be mentioned that research has made an important distinction between after-school language programs and learning subject matter in the heritage language within the mainstream curriculum. Thus, “for a heritage language to gain full legitimacy within the school system, it needs to be used to teach academic content within the mainstream curriculum” (Helms-Park, 2000, p.139). Currently, the Ontario public school system offers only 2.5 hours per week after-school heritage programs to children who are part of the ethnolinguistic minorities. To add to the difficulty, due to limited funding, often such programs teach students with a wide range of minority language abilities and various ages. The mainstream classes do not recognize the heritage languages as valuable resources that should be supported and encouraged for the benefits of the children. Nor are the heritage languages used for learning subject matter in the language. Therefore, perhaps, the fact that the parents did not register their children in the after-school classes offered by the Ontario school boards would not make a huge difference in the linguistic profile of the children since such programs have not been seen as a great benefit to the children (Helms-Park, 2000). Also, despite their initial implementation of a “Romanian only” policy in the homes, the monthly recordings prove that English is more present in the homes than acknowledged, especially for Dan. The parents’ lack of awareness of how much English is present has also been signaled in the literature (Chumak Horbastch, 1984).

The combined effect of (1) late exposure to L1 (at the age of 4), (2) positive parental attitudes towards languages, (3) rich input in L1, (4) temporal and constant
immersion in the L1 culture and language have been mentioned as the foundation that can explain why some children become more successful at maintaining and developing their heritage language while others are less successful (De Houwer, 2009; Montrul, 2013; Wright, Taylor & Macarthur, 2000). Taken together, these findings highlight that the children in the present study have the environmental support to succeed in maintaining and developing their first language once they are exposed to the societal language through schooling.

5.2 The Linguistic Profile of the Heritage Language

The main purpose of this study was to determine heritage language development over time in children learning English as a second language and whose first language is Romanian, as well as to understand how they compare to monolingual and other bilingual peers. Recent studies on the acquisition of heritage languages have signaled a series of areas affected in the heritage language grammars. These include vocabulary, morphosyntax, phonology and pragmatics. The following sections discuss the findings in each of these areas.

5.2.1 Romanian Vocabulary

It will be recalled that the vocabulary knowledge in this study was measured through the Romanian-adapted test of receptive vocabulary knowledge as well as the lexical measures provided by the analysis of the unique storytelling. The results support previous findings on vocabulary growth over time with bilingual children (Pearson & Fernandez, 1994; Vagh, Pan & Mancilla-Martinez, 2009). Based on developmental trends usually observed in bilingual as well as monolingual vocabularies, it was expected that the children’s performance at T5 (the end of SK) would be higher than their performance at T1 (beginning of JK) for both languages. Indeed, all three children’s receptive vocabulary knowledge increased with age in both languages. Although all three children showed growth in their receptive knowledge of vocabulary in both Romanian and English, there were individual differences in their rate of language development. The factors that led to these differences are worth mentioning for a comprehensive picture of the children’s L1 development. For example, both Radu and Dan showed the biggest
improvement of Romanian at the beginning of JK and beginning of SK after month-long visits to Romania, underlying the powerful impact immersion into a Romanian speaking environment can have on the development of the heritage language. In contrast, Moni’s visits to Romania were shorter, under a month each time, and thus the influence on her heritage language development was less obvious.

In order to investigate whether the children were disadvantaged on certain portions of vocabulary, an item analysis by word context (home vs. academic) was conducted. Based on the results of previous research involving bilingual children (Bialystok, Luk, Peets & Yang, 2010) it was expected that the children would know more words in the home category for Romanian than any other category for any of the two languages at T1 and that the Romanian academic category would lag behind any other category in either language by T5. This expectation was confirmed by the results of the study. Findings revealed that all three children knew more words in the home category for Romanian at Time 1 than for any other category in either languages, and that their academic Romanian lagged behind any of the other categories at T5 after two years of English language exposure in an academic setting. The highest increase was noticed for the English academic area for all three children a finding explained by the children attending kindergarten in English. The findings are not surprising given that the children use the two languages in different contexts: Romanian at home and English in school. The lack of academic experiences in Romanian led to stagnation or little growth in the children’s knowledge of words in this category. The finding is in line with previous research that signals a shift in the functional dimension of the language as the child grows up (Montrul, 2013) and points out that the lack of schooling in the heritage language leads to native language stagnation, slow development or even decline (Merino, 1983; Wright, Taylor & Macarthur, 2000). These findings point once again to the importance of schooling in the minority language as one of the conditions for minority language growth and maintenance.

Moreover, interestingly, the difference between the “home” Romanian and “home” English at T1 for all three children was not wide, suggesting that the exposure of the children to everyday English might have been more pervasive than declared in the interview by the parents. In fact this finding was supported by the qualitative analysis of
the monthly recordings that signals the presence of English in the children’s homes more than had been initially acknowledged. The fact that English permeated the “Romanian only” home environments of the children is not surprising given the social context in which the children live. What is interesting, however, is the parents’ lack of awareness of English presence and usage in their speech addressed to children and their conviction that their homes are English free, a finding that has already been documented by Chumak-Horbatsch (1984).

The narratives provided information about the children’s productive vocabulary knowledge. Two measures were used: NDW and Type/Token Ratio. All three children’s narratives grew in length over the two year period of time, the children producing more words per story at T5 (the end of SK) than at T1 (the beginning of JK). Given the similarities between the stories and that they were of approximately the same length, this means that all three children’s productive vocabulary knowledge grew during the preschool years. Note that unfortunately, the Type/Token ratio is a measure sensitive to the length of text analyzed and, thus, a direct comparison between its values at different points in time is not possible as the length of the children’s narratives varies significantly. However, the fact that the children had produced narratives of approximately equal length in both languages at different points in time (at T2 for Dan, T3 and T5 for Radu and T3 for Moni) and the Type/Token ratios were higher for Romanian, could suggest that at least at those times, the children used a more diversified Romanian vocabulary to narrate the stories, strengthening the finding that the children do continue to develop their minority language vocabulary.

5.2.2 Romanian Morphosyntax

The domain that is generally most noticeably affected in heritage language grammars is inflectional morphology (Note that this does not apply to languages with no or limited inflection morphology like Chinese or Thai). Previous studies showed that heritage speakers of languages with rich verbal agreement and overt gender, number, and case marking produce a significant number of errors (Bolonyai, 2007; Hakansson, 1995; Montrul, Foote & Perpinan, 2008; Polinsky, 2006, 2008)
The data from this investigation provide novel information regarding the development of mean length of C-units in words and morphemes and subordination index (SI) for Romanian-English speaking children. However, given the problematic nature of the measure used for the mean length of utterance (Park, 1981; Johnston, 2001; Avram, 2001), caution needs to be applied when interpreting the findings in this study. The findings suggest that all three children continue to develop their Romanian morphosyntactic knowledge over the two year period of time as their MLUw and MLUm continue to grow. However, the lack of monolingual Romanian norms for the two measures makes it difficult to interpret the results in terms of age-appropriate values. The few studies, conducted with Romanian children, either report insufficient or contradictory information on this matter (Babyonyshev & Marin, 2006; Coene & Avram, 2011; Windsor et al., 2011). In addition, Avram (2001) warns against using MLU as a reliable measure of child morphosyntactic development as it is “input driven” and it depends on the strategies used by the examiner to ask questions as well as the child’s disposition to engage in story telling or conversation. This was found to be true for the children in this study. The values obtained for the MLUw and MLUm seemed to be rather on the low side but the monthly recordings did not seem to suggest any major language deficit in rapport with the children’s age. This led me to conduct a discourse bias analysis which revealed that pragmatic factors did indeed affect the children’s MLU values. Data indicate clearly that discourse variables, such as use of single-word and elliptical question responses had a major influence on MLUw and MLUm, a finding in line with previous research (Johnston, 2001). This is an important factor to consider in interpreting the results since the children in this study did not engage easily in the story-telling task, and produced a significant number of one word utterances as responses to questions which limited the verbal output. Not talking too much could be a function of family style (Hart & Risley, 1999), cultural background (Crago, Annahatak & Ningiu rivik, 1993) or lack of language proficiency. An examination of the family language habits obtained through the recordings as well as the findings in the other tasks seem to suggest that the discourse variables and also limited experience narrating stories (the children were used to listening to rather than producing stories) are most likely the reasons behind the low values for the morphosyntactic measures rather than a lack of language proficiency. However, given the
issues mentioned above, no definite conclusions can be drawn with regard to the children’s Romanian morphosyntactic knowledge.

In general, the children exhibit limited command of complex syntax at the beginning of the study, but more sophisticated syntax as they go through the preschool years. At the age of 4 (T1) the children produce approximately one subordinate clause every 10 utterances. At the end of the preschool years (T5) their syntax is more sophisticated with children producing slightly more subordinate clauses every 10 utterances. The children’s use of subordination may have been influenced by the stories used in this study as well as the elicitation method (Fiestas & Pena, 2004; Gazella & Stockman, 2003). Previous studies have found that stories generated from a picture as opposed to stories generated from the memory (retell) are the least syntactically complex (Morris-Friehe & Sanger, 1992). However, it is noteworthy that the task did elicit a fairly long discourse sample and sometimes children would engage in expanding on the ideas generated by the pictures.

5.2.3 Romanian Phonology

There are relatively few studies in the area of phonological abilities for heritage speakers, and even fewer that have bilingual Romanian English at the centre of the study. The reason for this might be the fact that, in general, heritage speakers are described as having relatively good pronunciation even though they may have a nonnative accent (Montrul, 2013). The children’s knowledge of Romanian sounds was evaluated through the Romanian-adapted version of the CTOPP as well as through a qualitative yet limited analysis of the monthly recordings and narratives. Note that a comprehensive qualitative phonological analysis of the recordings and stories was beyond the scope of the study and it only provided me with limited observations and trends that need to be confirmed by further research.

Regarding the children’s phonological skills, the three composite scores generated by the Romanian-adapted CTOPP indicate the children’s ability relative to phonological awareness, phonological memory, and rapid naming. I will discuss each of these one at a time in the following section.
With regards to the phonological awareness skills, the children in the present study exhibit mixed behavior on the three subtests that make up the construct of phonological awareness: elision, blending words and sound matching. The findings are in line with previous findings that report that it is fairly common among the 6 year olds to exhibit mixed behavior on the subtests that make up the phonological awareness construct (Kilpatrick, 2012). One interpretation is that neither of the three phonological awareness subtests can stand alone, particularly at this age. Each of these tasks capture unique variance in reading skills and together they account for an important amount of this variance. The lack of research on phonological skills among Romanian children, makes it once again difficult to interpret the results. However, the fact that the children score above the average scores for all three subtests with the exception of Moni’s below average scores for Elision, could suggest that the children’s development of their Romanian phonological skills is at least at par with the same age monolingual children. Moni’s below average scores for the Elision test for both Romanian and English might possibly point to a deficit in that area. Also, a more general conclusion would be that the children’s performance on the subtests reflects a general understanding that oral language is composed of component sounds.

With regards to the children’s phonological awareness in the two languages, there is no consensus in the field whether phonological awareness in the L1 and L2 is a unitary construct or two related skills (Gottardo, Gu, Mueller, Baciu & Pauchulo, 2011). The literature provides evidence that phonological awareness is a metalinguistic skill that transfers across languages (Swanson, Rosston, Gerber, & Solari, 2008; see Geva & Wang, 2001 for a review) but it also cautious that phonological awareness skills in the L1 and L2 are not always completely overlapping (Branum-Martin et al., 2006; Gottardo & Mueller, 2009). Indeed, the children in this study perform differently on some subtests and fairly similar on others in the two languages. For example, all three children have fairly equal scores on the Romanian and English Sound Matching scores. Also, when it comes to the Blending Words task, all three children do better in Romanian than in English. However, on the elision test, the children exhibit mixed behavior with Radu performing almost the same in both languages, Dan showing an advantage for English and Moni performing fairly low for both languages but better in Romanian.
Phonological memory has been considered as a general cognitive skill and thus its effectiveness in one language would transfer into another language (Jared, Cormier, Levy & Wade-Wooley, 2010). Indeed, the children in the study have performed fairly equally on the two subtest in both Romanian and English with Moni performing slightly poorer on the Romanian version of the Nonword repetition task. Due to lack of normative scores for Romanian but based on the comparison between Romanian and English, we could cautiously conclude that the children’s phonological memory in Romanian as revealed in the two subtests is within normal limits when compared to age-matched children.

Unfortunately, the lack of Romanian norms for the Rapid Naming task makes it difficult to interpret the findings in this study. Also, the difference between the test items in terms of syllable length between the two languages (longer syllable items for Romanian) in addition to the scoring system for the two subtest (time based) makes a direct comparison between the two languages impossible. Therefore, the findings in this study with regard to the Rapid Naming task could only serve as a starting point for future research set out to establish Romanian norms for monolingual and bilingual children.

As mentioned above, a few limited and informal observations have been made with regards to the children’s phonology as it has been evident in the monthly recordings and narratives. Since a detailed account of the children’s phonology as it is revealed by the monthly conversations and storytelling tasks is beyond the mandate of this study, there is a need for future research to confirm or refute the findings that I will discuss in the next section.

Romanian and English are languages with partially overlapping sounds. It has been attested in the literature that once children are 4 years old, they have mastered most of the phonemes in their language (Goldstein, 2001; Nunez-Cedeno, 2008). Thus, it was expected that the children in the present study, have little or no difficulty producing Romanian sounds. The exploration of sequential bilingual acquisition, based on the free speech produced by children in various situations, suggests two important issues. One is that neither of the children show sound confusion. Their phonetic inventory of acquired sounds include all vowels (including the Romanian - specific ones [ə] and [ɨ]), and most of the consonants and consonant allophones at any point in time during the data collection. All three children produced the seven vowel phonemes /a e i o, u, ǎ ȋ (ȃ)/ at all
times of data collection, a finding in line with previous research that describes monolingual 3 and 4 year olds as being able to produce the vowel sounds with accuracy (Goldstein & Pollock, 2000; Stoel-Gammon& Herrington, 1990). At T1, all three children produced most of the consonants and consonant allophones. Dan and Radu produced an inventory including 17 consonant phonemes of Romanian while exhibiting incomplete mastery of the /tʃ/ in both initial and mid position, /ʃ/ in initial and mid position, and /dʒ/ in initial and mid position. Moni, on the other hand, shows incomplete mastery only for the initial and mid /ʃ/ being able to produce the /tʃ/ and /dʒ/ sounds at T1. At T5, all Romanian consonant sounds were produced by all three children. One observation is that all three children were able to produce the trill /r/ and its allophones at T1 suggesting that Romanian-learning children have mastered production of the Romanian /r/ earlier than reported for the English learners producing the dental /r/. This earlier mastery in Romanian could be attributed to the less complex way of articulating a palatal trill as opposed to an alveolar rhotic.

An informal qualitative analysis of the children’s suprasegmentals reveals intonation features and language rhythm that are not specific to Romanian monolingual children. One point that needs to be mentioned is the importance of the language model that the bilingual children hear. The parents of the children are immigrants to Canada who have spent considerable years in an English speaking environment and so their native language may carry speech patterns and rhythm specific to English rather than Romanian. Therefore, the children’s Romanian might have rhythmical patterns that are not specific to Romanian monolingual children. Also, it has been argued that the intonation features are the ones most likely to be affected first when changes in the linguistic environment take place (Hoffman, 1985; Whitworth, 2002). A qualitative analysis of the children’s speech after a visit to Romania and confirmation from the children’s parents reveal a language rhythm that is different from the rhythm the children exhibited before the trips to Romania and that is closer to that of Romanian monolingual children. Thus, exposure to the spoken language in a dominant Romanian speaking community resulted in an enriched repertoire of stress, rhythm and intonation features that have been absent otherwise from the children’s speech. This finding points to the importance of continued and varied language input.
In conclusion, despite the fact that there is no available study on Romanian phonological development that would allow a comparison of the present findings to the Romanian norms, the findings suggest that the children’s Romanian phonological system continues to develop over the two year period of time with children’s sound inventory being at least comparable to that of monolingual Romanian speaking children. The exposure patterns influence the children’s output leading to non-native effects in pronunciation especially at the suprasegmental level, a finding in line with previous research (Godson, 2004; Yeni-Komshian, Flege & Liu, 2000).

5.2.4 Romanian Discourse Skills

Narratives offer a number of advantages as a way of studying bilingualism and language development. In this study, narratives were used to look at multiple linguistic levels, including the discourse structure. Previous studies indicate that children start to be able to tell short connected stories at around the age of four (Schlyter, 1996). Among other things, telling a good story requires a beginning, a middle and also includes an initial motivation for the event, the unfolding of the event and a resolution to the event.

The NNS scores for the narratives produced in Romanian by the children over the 2 year period of time revealed an age-related development of the overall narrative structure and support the findings of previous research (Buja, 2008). At the age of 4, all three children had difficulty engaging in the story telling task and their narratives were descriptions of the static pictures rather than interpretations of the elements in pictures as related sequences of events. Their narratives lacked many of the basic elements of a story and had limited coherence and cohesion. The introductions lacked details about the setting and characters, the use of referents was done inconsistently, and the use of mental state words necessary to develop characters was either absent or very limited. The situation changed once children were past the age of 5 (T3 of data collection for Dan and Radu and T4 for Moni) when we witnessed emergent story tellers who were able to narrate events that followed temporal and/or casual sequences. All three children expressed the events in order but overmarked this by initiating almost every clause with the sequential expression si dup-aceea ("and then"), a finding in line with previous research (Buja, 2008). At the end of the preschool years (T4 and T5 of data collection)
when the children were between 5;5 and 6;1 years old, even more elements that make a good story started to emerge. They marked the beginning of the story by mentioning the setting and the characters, gave details about the events which followed a logical order, used smooth and more varied transitions to relate the events, made clear references throughout the story and mentioned the resolve of the conflict as well as the end of the story. In conclusion, at the age of 4 children had minimal narrative skills which continued to improve in all structural elements over the 2 year period of time. At the age of 6, children referred roughly at the major components of the plot: setting elements, problems, resolutions and endings. In other words, the children got better at telling stories in Romanian as they grew older, a finding that has been confirmed in the literature by studies carried out with other children and different language pairs (Buja, 2008; Romanian-English; Heilmann, Miller, Nockerts & Dunaway, 2010 monolingual English speaking children; Montanari, 2004 Spanish-English; Serratrice, 2007 Italian-English). When compared to age-matched bilingual children, the results suggest that the three children’s performance is within the normal limits for their age.

5.3 The Linguistic Profile of the Majority Language - English

Although the development of English was not at the forefront of this study, an analysis of the children’s majority language proficiency was also conducted. Research comparing monolingual and bilingual children on a wide variety of language tasks often signals a deficit in the bilingual child’s languages (Oller, Pearson & Cobo-Lewis, 2007 for vocabulary, Pearson, 2002 for morphosyntax). One determining factor of how big the deficit is, is the amount of exposure to the two languages (Paradis, 2010). The children in the present study are sequential bilinguals who have been exposed to Romanian from birth and started learning English in an academic context after the age of 4.

5.3.1 English Vocabulary

The children’s receptive vocabulary knowledge was assessed through the PPVT-4. All three children continued to develop their English vocabulary over the 2 year period of time, starting below the 50th percentile at T1 and scoring above or equal to the 50th percentile at T5 (the end of SK) pointing to the fact that their receptive vocabulary
knowledge does not lag behind that of the monolingual children, a finding that refutes findings in previous research. An encouraging but not surprising finding is that all three children showed a sharp increase in their English receptive vocabulary knowledge in the first 6 months of attending JK and kept improving it throughout the preschool years. Dan’s behavior on the test is interesting and deserves further discussion. Dan’s vocabulary knowledge showed peak performance at T2 (spring JK) and T4 (spring SK) and the lowest performance at T3 (fall SK) and T5 (fall Gr. 1). A plausible explanation of this behavior is Dan’s rather lengthy trips to Romania over the summers. After an immersion into the heritage language environment, Dan exhibited vocabulary attrition in English, attesting to the fact that the linguistic soundscape of the children is highly dynamic (De Houwer, 2009) and plays a crucial role in the balance between the children’s two languages. The finding is also in line with previous research that suggests that summer vacations positively impact receptive language skill growth in bilingual children (Hammer, Lawrence & Miccio, 2008; Rojas & Iglesias, 2013) and has a negative impact on the school language that receives less input over the summers.

The fact that the amount of exposure in each language determines how big or small the difference between the monolingual and bilingual children are, such variations in the children’s performance should not be surprising given that the exposure patterns to language for bilingual children differs greatly than for monolingual children.

5.3.2 English Morphosyntax

The narratives provided information about the children’s English morphosyntax. Two measures were used: MLUw and SI. Since the SALT reference database did not have monolingual norms for either measure which would mirror the conditions under which the data were collected for this study, i.e. unique English monolingual storytelling, the data obtained were compared with the norms provided by the SALT reference database for bilingual Spanish –English children that would meet the conditions mentioned above. The comparison points to age-appropriate values for both MLUw and SI at the end of the preschool years, suggesting that the children’s English morphosyntax is within normal range when compared with age-matched bilingual children.
The fact that all three children’s MLUw and SI values increased during the preschool years, this finding mirrors previous research that found that the use of subordinate clauses emerges during the preschool years (Diessel & Tomasello, 2000) and continues to develop through the school-age years (Nippold, 2007; Nippold, Hesketh, Duthie, & Mansfield, 2005). Previous studies conducted with monolingual children have found SI values in various ranges which suggest that the children in the present study follow a normal developmental path for their English morphosyntax. For example, Scott (1988) reported mean SI=1.22 for students in Gr 3. Nippold et al. (2005), report a mean of 1.42 (SD=0.23) for the SI in a study with participants whose mean age was 8 years old. Furthermore, Heilmann, Miller, Nockerts & Dunaway (2010) report an SI of 1.1 for bilingual children whose mean age is 6. The fact that the syntactic index encounters both decline and increase for all three children during the two years should not be interpreted negatively. On the contrary, it should be viewed in a positive light in the sense that even the preschool children are able to use subordination and that their syntactic system is still developing. It is very plausible that a different type of task (e.g. one in which the children are asked to talk about a favourite activity) would yield different outcomes with the children’s syntactic competence being revealed consistently and reliably. In fact, the syntactic index has been found as a key marker of syntactic development in conversations (Scott & Stokes, 1995) but not in expository discourse (Nippold et al.).

5.3.3 English Phonological Skills

The children’s English phonological skills were assessed through the CTOPP. The results for the composite scores revealed different patterns for the three children. Dan exhibited above average phonological awareness and rapid naming skills while his phonological memory was at par with that of monolingual children. Radu showed superior phonological awareness skills and above average phonological memory while his rapid naming skills were at par with monolingual children. Moni’s all three composite scores were within the average range. The overall picture that emerged from these findings is that all three children’s phonological skills were ranging between average and superior, confirming that bilingualism is no disadvantage to children who speak one language at home and another at school. Preschool phonological skills transfer from L1 to
L2, just like other oral and written literacy skills in older children (e.g., see Cummins, 1991, for a review). The findings indicate that the parents should not be afraid of encouraging their children to use their heritage language at home as the findings in the present study suggest that the children’s phonological skills in English do not lag behind those of other monolingual children.

### 5.3.4 English Discourse

The NSS scores for the English narratives were obtained from all three children at four rounds of data collection. The findings point out that all three children continued to improve their narrative skills as they grew older, a finding in line with previous research (Buja, 2008). Narrating a story requires knowledge of a specific kind of discourse and familiarity with it. Although the preschoolers bring with them a wide variety of narrative skills gained through life experiences and social interactions (Michaels, 1981), access to school-based knowledge is necessary for successful narrative telling (Hicks, 1991). This might explain why Radu is the child with the highest NSS score at the age of 4.6 since he is the only one who started attending kindergarten full time rather than part time like Dan and Moni. Note that at the age of 6 all three children had narrative skills within normal limits when compared to age-matched bilingual peers.

A crosslinguistic analysis of the NSS scores revealed an interesting pattern. All three children performed equally or better in English than in Romanian at T2 after only 6 months of schooling in English. Given that they spent the first 4 years at home in a predominantly Romanian monolingual environment, the finding is surprising. An explanation could be the fact that, as already mentioned, English seemed to be more pervasive into the children’s lives than the parents were aware of. Another possible explanation is a difference in the view of narrative discourse style in Romanian and Canadian cultures. A qualitative analysis of the monthly recordings provided by the parents revealed that at least in these children’s case, there was an accepted or expected passive role on the child’s part with regards to participating in story telling. In most of the recordings that the parents did at bed time, the children listened passively and quietly to the parents’ reading the story with minimal intervention or participation. Thus, it could be that the children were trained to listen to stories rather than tell stories in Romanian,
while in kindergarten, they were trained to actively participate in constructing a story in English, an expectation in Canadian culture. Finally, the lack of academic experiences in Romanian might also have influenced the children’s performance on the narratives as it has been established that such experiences are necessary for successful story telling (Hicks, 1991).

The narratives were also used to examine a uniquely bilingual measure: code-switching. The aim was to identify the influence Romanian has on English and it was found that there is very little or no influence at the lexical level. The frequency of code-switching in both the Romanian and English narratives was extremely low, the children sticking to the language in which they were asked to tell the story. The extremely low frequency of the code-switching points to the fact that the two languages develop in balance rather than that English has become the children’s dominant language. However, contrary to previous research (Iluz-Cohen & Walters, 2012), the present study found that the directionality and locus of code switching follow the pattern L2 - to - L1 code-switching rather than L1 - to - L2 as it has been found for sequential bilinguals. A possible explanation for this finding is the fact that the children lacked academic experiences in Romanian as well as had limited academic Romanian vocabulary as found in the Romanian-adapted PPVT. Since successful narration of a story requires school-based knowledge, the children may have relied on that knowledge in English and used it when they needed it to narrate the Romanian stories. Similar to previous studies, however, most of the code switching was with nouns and noun-phrases (Ervin-Tripp & Reyes, 2005; Lanza, 2001). This finding strengthens the interpretation above since the children’s academic portion of the Romanian vocabulary shows deficiencies.

A qualitative analysis of the narratives further revealed influence of Romanian on the English morphosyntax at the word order level (consistently throughout the preschool years with Radu but not with Moni), prepositions, and subject drop. The influence is in fact bidirectional, English morphology also being reflected in the children’s Romanian morphology at the level of prepositions, especially with the preposition “in”, as noted in the results.

A qualitative analysis of the narratives and monthly recordings suggests that at the sound level, there is a bidirectional influence with Romanian influencing mainly the
English sounds - the children produce a rolled /r/ sound for both Romanian and English at T2 but show evidence of being able to produce the English /r/ at T5 - and English also influencing the Romanian sound system mainly at the suprasegmental level – the children produce utterances in Romanian with a non-native rhythmical pattern. Transfer of phoneme properties from one language to another has been often reported in the literature for bilingual children (Gildersleeve-Neumann, Kester, Davis & Pena, 2008; Kehoe & Lleo, 2003).

5.4 Influence of Speaking the Heritage Language on the Development of English

The findings of this study with regard to the influence the heritage language has on the majority language yielded mixed results. To determine crosslinguistic influence, a potential cognate advantage was investigated using the standardized receptive English vocabulary knowledge test (PPVT-4), adding to a small and conflicting body of research investigating bilingual children’s sensitivity to spoken (vs. written) cognates (Cunningham & Graham, 2000; Kelley & Kohnert, 2012; Kohnert, Windsor & Miller, 2004; Umbel & Oller, 1994; Pearson, Fernandez & Oller, 1993). A cognate was defined as an item that has a COSP score higher than 5 (Kohnert et al., 2004). Of the total target items, 30% were classified as cognates. Percentage of the correct answers were calculated for both cognates and non-cognates at the beginning of the study (T1) and at the end of the study (T5). A higher percentage score on cognates relative to non cognates reflected a better performance on English vocabulary items that were classified as cognates.

Is there a cognate advantage? One of the children, Radu showed greater and more consistent cognate advantage at both T1 and T5, while Dan and Moni showed little or no cognate advantage, depending on the point in time of data collection. Dan showed a very slight advantage at T5 and no advantage at T1, while Moni exhibited an opposite behavior displaying a cognate advantage at T1 and no cognate advantage at T5. In other words, there is a clear cognate advantage for one of the participants with the other two participants showing variation. As signaled by Kelley & Kohnert (2012), such individual variations are frequent in the study of bilingual children “even within any well-defined relatively homogenous sample” (p.200). The researchers point out that it may be precisely this variation that led to conflicting results in the literature regarding the
existence of a cognate effect with bilingual children. In my opinion, longitudinal case studies like this one have the potential to find out the variables that are associated with the presence of a cognate facilitation in children who exhibit this advantage. One possible explanation why Radu is the one exhibiting a cognate advantage consistently could be the fact that, when compared to Dan and Moni, he also exhibited higher scores for the phonological awareness skills as measured through CTOPP at the end of the preschool years. It has been signaled in the literature that the metalinguistic skills including phonological awareness contribute to higher literacy skills and could be reflected on the receptive cognate vocabulary measure used in this study (Gottardo, Gu, Mueller, Baciu & Pauchulo, 2011; Kelley & Kohnert, 2012). Thus, Radu’s heightened phonological awareness might have contributed to a greater awareness of phonological overlap. However, caution must be exerted when drawing any conclusion and a limitation needs to be mentioned here. The PPVT is not a test designed to test the cognate facilitation hypothesis but rather to assess receptive vocabulary knowledge. Also, there were just a few items at T1 (5 in Moni’s case) that met the “cognate” criterion. Thus, it is possible that a facilitation effect is not seen due to the type and number of words tested in the PPVT4 and the results may have been different had there been more cognates included in the test. The literature also cautions that identifying cognates is a skill that needs to be taught since it is not intuitively developed (Garcia & Nagy, 1993). Considering that the children did not receive any explicit instruction on how to recognize or look for cognates, it is possible that they might exhibit a cognate advantage when/if their attention is systematically drawn to the cognate relationship in school in future.

In summary, the results are inconclusive, with one child exhibiting a cognate advantage, and two showing either just a slight or no cognate advantage. Since studies suggest the importance of L1 vocabulary development for English L2 vocabulary development when cognate relationships exist between the two languages, and cognates appear to be an important mechanism for L2 vocabulary (Cummins, 2005; Cunningham & Graham, 2000; Helms-Park & Dronjic, 2012; Petrescu, Helms-Park & Dronjic, 2009), further systematic investigations are needed to determine which children exhibit a cognate advantage and under what circumstances.
5.5 Limitations

Despite the fact that this study has advanced our understanding of language development in minority-language sequential bilinguals, it has a number of limitations. One of the limitations pertains to the number of participants. While the small number of participants allowed me to probe in depth the issue of heritage language acquisition and maintenance, it also makes the generalization of the findings problematic. This is something to bear in mind with all types of research but is particularly pertinent to the present research study since it employs only three participants. Thus, it is not possible to extrapolate the findings to other Romanian-English bilingual children. More research on this topic with larger sizes is necessary. Nonetheless, the design of this study, through its in-depth longitudinal focus on three participants, has the potential to provide rich insights into first language development and maintenance of a small set of bilingual English-Romanian children in a large urban centre in Canada.

Another limitation is the lack of norms for Romanian child language acquisition which makes it difficult to draw any definitive conclusion with regard to the children’s minority language development. Thus, there is an obvious need for similar studies with Romanian monolinguals and with bilingual Romanian-English from as many cultural and linguistic communities as possible. Ideally, the children’s performance on the tasks in this study could be compared with the performance of a homogenous group of Romanian monolingual children and with other Romanian-English bilingual children. Only by conducting such a study, can we hope to have a clear understanding of a “normal” minority language development in Romanian, to be able to compare with English monolingual children and to understand how bilinguals fall between the two cases.

Furthermore, the vocabulary test (Romanian-adapted PPVT-4) and the phonological test (Romanian-adapted CTOPP) developed for and used in this study had some limitations in addition to their strengths. First, the vocabulary items used were, for the most part, translation equivalents of the English items. Given the fact that there are no established frequency lists for Romanian, the test items may not have been in the same frequency range as their English equivalents which might have been a source of variability in the children’s performance. To address the limitation, the test items were developed in conjunction with 3 parents and were pilot tested with older children.
Second, the lack of Romanian norms for both tests makes it impossible to compare the children’s performance with that of other Romanian monolingual children. Once norms are established, it should be possible to interpret the results in reference to the normal range.

Another limitation in the current study was the use of the English PPVT-4 for a purpose other than that for which it was developed. The PPVT-4 was designed by the publishers to provide an index of receptive vocabulary knowledge, not for the investigation of a possible cognate effect. This made it difficult to include sufficient items in the test to obtain conclusive results. The small number of participants combined with the use of the instrument developed for a different purpose provides a gross measure of cognate facilitation effect. Therefore, this test might not be the most appropriate to investigate a possible cognate effect and perhaps other measures should be used or developed. Since the main purpose of the present study was to document the minority language development rather than to test a cognate facilitating hypothesis, future studies would need to develop a separate measurement specifically designed to test a possible cognate effect with bilingual children.

A further limitation is the parental reporting in the interview. One attested drawback of interviews is that they may involve selective recall, perceptual distortions, or subjectivity in the researcher’s recording and interpreting the data (Hall & Rist, 1999). However, with the use of multiple sources of information (interviews, language tasks and recordings of free conversations between parents and children), one is more likely to strengthen the contextual validity of the data, decrease distortions, and increase the confidence in the interpretations (Lincoln & Guba, 1985).

The next chapter is the concluding one and will highlight the study’s contributions while presenting some directions for future research and offering recommendations to parents and educators for creating optimal conditions for children’s harmonious bilingual development.
Chapter 6: Contributions, Future Directions and Recommendations

The present study contributes to our knowledge of minority language development in Canadian-born Romanian speaking children by providing a comprehensive overview of their linguistic environment and abilities during the first two years of formal preschooling in English, and determining the impact of majority language exposure on minority language skills. Moreover, the study documents the children’s performance on two standardized tests in relation to monolingual children, and the degree of crosslinguistic influence.

The study can be seen to enrich the small body of research on minority-majority language acquisition in young children in various ways. First, this study was one of the few longitudinal examinations of language growth in bilingual children. By using a longitudinal design and multiple language measurement instruments, minority and majority language growth was described during the first two years of schooling in English. To understand minority language development and maintenance and the factors that influence the outcomes of preserving the minority language, we must characterize change over multiple points in time within both the minority and majority language and within the individual domains of each language. Only by measuring change frequently, can we contribute complex and necessary information concerning the factors that lead to successful bilingual development and maintenance.

Furthermore, this study focused on language acquisition in a unique context. There have been no other longitudinal studies involving Canadian-born children with Romanian as their first language and English as their second and whose parents, recent arrivals in Canada, were strongly motivated to help their children maintain their minority language without fear of their children’s English (the L2) being adversely affected.

This study also combined a psycholinguistic approach with a sociolinguistic one, taking into account the macro and micro contexts within which the children were growing up. The study could add significantly to the small body of systematic research that exists at the moment on factors leading to additive bilingualism. Collecting a wide range of data on different aspects of the children’s linguistic environment, for example, through the parent interviews and through monthly recording, allowed for an in-depth
characterization of the children’s language development and helped to identify some important variables that play a role in the children’s acquisition of the two languages. The development of the Romanian-adapted PPVT-4 and Romanian-adapted CTOPP was also a novel and important contribution of this study. While the tests were not validated through a trial run with a large sample, they allowed for tentative cross-language comparisons of bilingual vocabulary and phonological skills. Romanian is one of the many languages in world that lack standardized language measures; thus the current study’s newly developed tests are a starting point for future studies that could use them with larger number of participants.

Future studies are needed to further our understanding of language development in bilingual children. From the findings of this study a few pointers emerge for future research. First, it would be interesting to chart the future progress of participants like the ones in this study in order to examine the patterns of their minority language development and language preference over time. It would be interesting to see whether a significantly more limited exposure to English in an educational setting leads to higher rates of minority language maintenance and how a third language, for example, French, influences the dynamics of the two. (It will be recalled that the participants in this study were admitted to French immersion in Grade 1.) This would provide a more accurate picture of minority language maintenance and the changing pattern of language use among bilinguals. Second, further longitudinal studies with a wider age range are necessary in order to capture a more comprehensive picture of the minority language development over time. In order to understand minority language development and maintenance, we need to document its growth, stagnation or attrition patterns over multiple observations and to document its continuous change in various linguistic domains. Conducting longitudinal studies that include longer time spans with children of various ages is important for future research.

In the same vein, studies are needed to investigate the language development of both monolingual Romanian children and bilingual children of various ages and in different contexts. These studies can inform theories of language learning in general and theories of sequential bilingual acquisition in particular. They would also establish much needed referential norms that are lacking in the field right now.
In the case of bilingualism involving genetically related languages, future studies might provide a clearer picture of the crosslinguistic influence by including a measure of cognate knowledge which can capture a possible cognate advantage for bilingual children. This would inform practitioners with regard to bilingual instructional strategies that promote positive cross-linguistic transfer (Cummins, 2005).

This study provided information on the developmental patterns of minority language in bilingual preschoolers from a Romanian minority-language community who were learning English in kindergarten while using and learning Romanian in their homes. The findings indicated that the children continue to show improvement in both their minority language (Romanian) and majority language (English) during the preschool years. However, the findings show a slower rate of development for the academic portion of the Romanian vocabulary. Since studies have shown that knowledge of Romance languages assists with academic English, and that strong academic skills in children’s L1 lead to academic success in L2, if parents are interested in helping their children develop this aspect of the language, perhaps they should make extra efforts to develop Romanian vocabulary at a higher level. This could be accomplished through seeking opportunities for the children to be exposed to academic experiences in Romanian or to have frequent visits to the home country. In addition, studies on the use of languages in minority and majority language classes in the mainstream programs and after-school programs may be informative. Considering that the children in this study showed slow development in their home language academic vocabulary, it would be beneficial to establish what instructional strategies would be inclusive of the language learning acquired at home that would enable immigrant children’s continuous development.

Families should continue to use discourse strategies meant to promote the use of home language. Based on the information provided by the parents, they showed a positive attitude towards languages in general, expressing their desire that the children will continue to develop in the minority language once they start school in English. Although the parents employed various strategies to help their children maintain the heritage language, they should be aware of the extensive influence that the majority language has on their children’s home language. Although children were exposed to mainly Romanian in their homes, English was more present in their lives than it was
reported by the parents. This was evident in the monthly recordings but also reflected in their performance on the vocabulary test and the narratives. The language practices at home along with a carefully planned curriculum could lead to successful minority language maintenance, enriching our children’s linguistic experiences and preparing them for the multilingual world in which we live today.
References


### Appendix A: Permanent Residents of Canada with Romania as country of origin

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Permanent Residents - Total</strong></td>
<td>212,869</td>
<td>226,073</td>
<td>216,038</td>
<td>174,200</td>
<td>189,966</td>
<td>227,465</td>
<td>250,638</td>
<td>229,040</td>
<td>221,355</td>
<td>235,824</td>
</tr>
<tr>
<td><strong>Romanian Permanent Residents - Number</strong></td>
<td>3,851</td>
<td>3,670</td>
<td>3,916</td>
<td>2,976</td>
<td>3,467</td>
<td>4,431</td>
<td>5,588</td>
<td>5,688</td>
<td>5,465</td>
<td>5,655</td>
</tr>
<tr>
<td><strong>Romanian Permanent Residents - Percentage</strong></td>
<td>1.8</td>
<td>1.6</td>
<td>1.8</td>
<td>1.7</td>
<td>1.8</td>
<td>2.0</td>
<td>2.2</td>
<td>2.5</td>
<td>2.5</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Romanian Permanent Residents - Rank</strong></td>
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<td>12</td>
<td>12</td>
<td>15</td>
<td>14</td>
<td>11</td>
<td>8</td>
<td>7</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td><strong>Rank Among European Countries of Origin</strong></td>
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<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note. Adapted from Tudoroiu, 2007.*
Appendix B: Guiding questions for the interview

1. What is your child’s date of birth?
2. What is your child’s first language?
3. For how long have you lived in Canada?
4. What is your level of education? (Secondary school High-school University)
5. How would you rate your level of English? (Not good somehow good good very good excellent)
6. How would you rate your child’s level of Romanian?
   (e.g. Can speak and understands everything, has problems understanding and speaking, understands everything but cannot speak)
7. Does your child speak to you in English? In percentage, how much would you say your child uses English?
8. To how much English is your child exposed every day? What are the sources?
9. Who provides daycare for the child? What is the language of communication?
10. Do you encourage your child to use more English as opposed to Romanian?
    Why?
11. In future, after going to school, will you prefer your child to speak Romanian or English to you?
12. Do you plan to register your child with the Heritage Language Program (weekend Romanian language school) offered by the Toronto District School Board or other public boards? Why?
13. What do you think about Romanians’ children who live in Canada and are not able to use Romanian?

14. Do you read to your child in Romanian? How often?

15. Is it hard or easy to have access to Romanian reading materials?

16. Do you read to your child in English? How often?

17. In your opinion, how important is English in your child’s success in school and in the Canadian society?

18. How important is it for you to have your child be proficient in Romanian?

19. How important is it for you to have your child speak other languages than English and Romanian?

20. What is the main language of communication you use in your house?

21. What do you do to support your child development in Romanian?

22. What do you do to support your child development in English?

23. Do you think it is important for your child to learn how to read and write in Romanian? Why? If yes, how do you plan to support your child’s development of these skills?
Appendix C: Call for Participants

**Participants Needed for a Language Development Study**

(Children born in 2006, have Romanian as the home and dominant language and have never attended any day care in a language other than Romanian)

I am conducting a study at OISE/UT in the Department of Curriculum, Teaching and Learning on bilingual Romanian children’s mother tongue and its importance for education. The study will start in September 2010 and will end in September 2012 and you and your child participation will be voluntarily. You will be reimbursed with a total of $100 in gift certificates at Chapters and your child will be rewarded with a total of $200 worth of gift in educational materials.

If your child was born in the year of 2006, has Romanian as his/her first language, and has never attended a daycare in a language other than Romanian, please e-mail at maria.petrescu@utoronto.ca. Thank you!
Appendix D: Informed Consent Letter

[INFORMED CONSENT LETTER AND FORM FOR PARENTS/GUARDIANS]
EACH PARTICIPANT WILL BE GIVEN A COPY OF THIS FORM

(ON OISE/UT, CTL Department LETTERHEAD)

Project Title: Minority Language Acquisition and Retention: A Study of Canadian-Born Romanian-Speaking Bilingual Children
Date:

Informed consent letter and form for adult participants
I am conducting a research project to examine language acquisition and retention in young bilingual children. The project is titled “Minority Language Acquisition and Retention: A Study of Canadian-Born Romanian-Speaking Bilingual Children”, and the investigator is Maria Claudia Petrescu, a doctoral student, from the University of Toronto.
I would like you, the parent/guardian to take part in this project by participating in an interview in which you will be asked questions about your home language practices and your attitude towards the home language and English. The first interview will take place at the beginning of the study which is April 2010 and it will take approximately 30 minutes. There will be follow-up interviews every six months until the study commence, which is September 2012. The interviews will be audio taped. The interview will provide an opportunity for you to share your ideas and opinions about the importance for you and your child to maintain his/her home language.
Your participation is voluntary. There are no known risks associated with participation in this study, as the procedure is very similar to normal discussions.

Your results will be kept confidential. To protect against a breach of confidentiality, your responses will be identified by pseudonym rather than name. Your name will never together on a single list, and no names will be used in any report of the research findings. The audiotapes will be transcribed and then erased. You may withdraw your participation in the study at any time.
If you wish, information about our findings will be made available to you. If you have any questions or concerns about this research project, please feel free to contact me at the address below.
Maria Claudia Petrescu, Maria Claudia Petrescu, PhD Candidate, OISE/University of Toronto, 255 Bloor Street West, Toronto, Ontario, 1V6 CANADA, 416-371-1027; maria.petrescu@utoronto.ca

You can also contact my PhD supervisor at the address below.

Rena Helms-Park, Associate Professor, OISE/University of Toronto, 255 Bloor Street West, Toronto, Ontario, 1V6 CANADA, 416-978-0277

Ethics office:
McMurrich Building, 12 Queen’s Park Cres. W, 3rd Floor Toronto, ON M5S 1S8
TEL: 416-946-3273 FAX: 416- 946-5763 EMAIL: ethics.review@utoronto.ca

I thank you for your participation. Please sign below to indicate that you have read the information in this form and that you agree to participate.

____________________________________
______________________________
Parent Consent Form

I have read and understood the letter describing the proposed study, titled “Minority Language Acquisition and Retention: A Study of Canadian-Born Romanian-Speaking Bilingual Children.”

I understand that my child will be participating in language activities so that the researcher can examine my child’s language and language comprehension and production. All information collected will be kept confidential. There are no risks involved and there are financial direct benefits to me, and my child. The study will increase researchers' understanding of children's language development.

I understand that my child will be asked if s/he wants to take part and will not be required to do so if s/he is shy or unwilling. Also, s/he may stop and return to the classroom at any time without penalty. I may withdraw my consent at any time. If I do not give permission or if my child does not want to participate, I understand that it will not affect me or my child in any way.

Child's Name ___________________________________________________________________

(please print)

Child's Date of Birth ___________________________________________________________________

(month/day/year)

I give my permission for my child, named above, to participate in the University of Toronto study conducted by Maria Claudia Petrescu.
Appendix E: The Time Frame for the Project

<table>
<thead>
<tr>
<th>Time</th>
<th>Age</th>
<th>Romanian tests</th>
<th>English tests</th>
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<tbody>
<tr>
<td>Sept. 2010</td>
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<td>Interview with parents</td>
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<tr>
<td></td>
<td>Age 4</td>
<td>Romanian-adapted PPVT</td>
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<td></td>
<td></td>
<td>Story telling</td>
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</tr>
<tr>
<td>March 2011</td>
<td>4;4 – 4;8</td>
<td>Romanian-adapted PPVT</td>
<td>English PPVT</td>
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<td>Story telling</td>
</tr>
<tr>
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<td>English PPVT</td>
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<tr>
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<td></td>
<td>Story telling</td>
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</tr>
<tr>
<td>March 2012</td>
<td>5;4 – 5;8</td>
<td>Romanian-adapted PPVT</td>
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<tr>
<td></td>
<td></td>
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<td>Story telling</td>
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</tr>
<tr>
<td></td>
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<td>Romanian-adapted CTOPP</td>
<td>CTOPP</td>
</tr>
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Appendix F: PPVT-4 – Home Items vs. Academic Items

**Home**

- Basic colours and numbers
- Common household items
- Commonly used clothing
- Common musical instruments
- Common fruits and vegetables
- Common food items found in most homes
- Household pets
- Common domesticated animals and prevalent wild animals
- Words related to playing and other common physical activities
- Commonly discussed body parts
- Culture specific items
- Words most likely to be learned by oral dialogue in the home

**Academic**

- Uncommon colours
- Uncommon household items
- Uncommon items of clothing
- Uncommon musical instruments
- Uncommon food type
- Uncommon domesticated and wild animals
- Plants and associated terminology
- Rarely discussed body parts
- Uncommon means of transportation
- Geographical types
- Landscaping
- Uncommon infrastructure
- Building components
- Shapes and geometric patterns
- Professions/occupations and associated attire/occupational tools or associated terminology
- Professional activities
- Words reflecting school experience