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First Language Loss and Maintenance in Adolescents and Young Adults from Immigrant Backgrounds

Wanxin Li
lixx3310@mylaurier.ca

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Backgrounds

by

Esther (Wanxin) Li

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Abstract

Language attrition is a documented phenomenon that occurs when individuals progressively lose their first language (Schmid et al., 2007). This is particularly common among individuals who relocate to a country that speaks a foreign language that differs from their first language, as the societal language eventually becomes their dominant language. Deterioration and loss of the first language (L1) may result in consequences such as loss of ethnic and cultural identity, leading to the loss of a link to one's country of origin (Cho & Krashen, 1998). Thus, the present study examined factors that may contribute to L1 attrition. The present study aimed to assess individuals' L1 skills in relation to their cultural affiliation with their heritage and/or Canadian backgrounds after the participants emigrated from their home country to a foreign country (Canada). This study also looked at whether participants' L1 skills are preserved if they are residing in a multigenerational household. Participants were instructed to complete a series of surveys that measured their receptive vocabulary size in English, levels of acculturation to the host culture, and language dominance. Participants were also scheduled for a one-on-one Zoom session to assess their verbal fluency in their L1 and English. Group comparisons based on age of arrival and being born in Canada showed differences in self-reports of L1 and L2 skills, enculturation and acculturation. Group differences were also found for groups based on whether or not participants attended school only in Canada or also in another country. Also group differences were found based on differences in language dominance as measured by the bilingual dominance scale. However, no effect was found for participants who lived in a multi-generational home and those who did not. This exploratory study may provide insight into the field of language development and literacy by showing a comprehensive relationship between L1 loss and acculturation.

Keywords: Language attrition, Acculturation, Multigenerational home environment

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Introduction

According to the 2016 Census, 21.9% of the Canadian population is from an immigrant background (foreign-born). While Canada is often referred to as a multicultural mosaic, people who immigrate to Canada may still experience acculturation as they begin to integrate into their new host country. Acculturation is the gradual process of adapting to a new cultural environment upon relocating from one's heritage culture to a new and prevailing culture of the society in which one resides (Ward & Berry, 2001). Individuals often integrate themselves into a new dominant culture by adopting the prevalent culture's traditions, norms and practices while still retaining some of the values of their own heritage culture (Berry, 1994). Association with their heritage culture, known as enculturation, includes values, beliefs, customs that affect individuals' thinking as well as behavior. Thus, people generally strive to retain their traditional cultural customs and practices that are considered positive and ideal to them and have a positive impact on their lives (Baker, 2013).

Acculturation is especially common among younger children and adolescents, as research suggests that they acculturate at a faster rate than older adults (Cheung et al., 2011). Acculturation may involve changes to religious practices, culture, food and language. People may also develop changes in their socialization processes as they blend the dominant culture's norms, values, and behaviours with their native culture. On the other hand, enculturation is the process where individuals are acquiring and retaining their own heritage culture (Berry, 1994). Individuals often select the essential core values of their heritage culture and maintain customs and traditions that are valuable to them. Enculturation occurs when people maintain values and traditions particular to their culture or their family's culture of origin. Acculturation commonly occurs when individuals adopt the dominant values, practices and

norms of their new country. Thus, relocation is an important factor that leads to acculturation, with the progression of becoming acculturated to a new host country encouraging the acquisition of a second language (Jiang et al., 2008). The present study examined the relationship between acculturation and first language (L1) loss or maintenance in adolescents and young adults who have emigrated from their home country to a foreign county, in this case, Canada or who were born in Canada to immigrant parents. These participants were divided into three groups: 1) Canadians born to immigrant parents, 2) immigrated to Canada prior to 10 years of age and 3) immigrated to Canada at 11 years of age or older. All of the participants reported speaking English as a second or additional language. Additionally, this study examined whether specific factors were associated with helping individuals preserve their L1 skills, such as residing in a multigenerational household or having attended school in a non-English speaking country. The role of language dominance was also examined.

Bilingualism and language dominance

Individuals who use two languages are considered bilinguals, and the use of multiple languages is referred to as multilingualism (Tucker, 1999). Various studies have shown that individuals who speak more than one language are more proficient at language learning compared to their monolingual counterparts (Abu-Rabia & Sanitsky, 2010; Cenoz, 2003). Not only that, bilingual or multilingual individuals also show enhanced executive functions and even have reduced risk of dementia (e.g., Bialystok & Martin, 2004). Bilinguals may also have labor market advantages over monolinguals because bilinguals can perform tasks that monolinguals cannot, such as communicating with customers or clients who only speak a minority language. In fact, a study conducted by Agirdag (2014) discovered that bilingual individuals in the U.S. have more economic advantages as they were found to have an annual salary of approximately $3000

more than their monolingual counterparts. Thus, the advantages of speaking more than one language are supported by research, as communication skills are a vital factor in people's everyday lives.

Bilingualism is often described as "knowing" two languages (Valdez & Figueora, 1994). One complication associated with this term is that defining what "knowing" two language means can be vague and unclear. Some bilinguals are more proficient in one language than another, while some bilinguals are highly proficient in both languages that they speak (Gottardo & Grant, 2008). Previous literature showed that achieving native-like proficiency in both languages is very rare. Additionally, simultaneous bilingualism with neither language being dominant is rare. The phenomenon known as language dominance concerns the relative proficiency in two languages, and it can also be conceptualized as how frequently the bilinguals use their languages. Examining language dominance is critical as it reveals the bilingual learners' proficiency in each language and ability in each language (Treffers-Daller, 2019). Language dominance is a process where individuals have different levels of proficiency in two disparate languages. Language dominance can be related to the level of importance assigned to each language with the speaker choosing which language to speak more frequently (Accurso, 2015). Alternately, the dominant language might be the language which affords the most opportunities such as the societal language. Various factors such as age of acquisition, and the frequency of usage of L1 and L2 all affect language dominance.

Researchers proposed a sensitive period for native-like second language (L2) acquisition, where acquiring an L2 at a younger age would be related to higher proficiency. For instance, De Houwer (2005) suggested that brain organization is different for L2 acquisition after 5 years of age in comparison to before age 5, where native-like proficiency for a language is possible.

Research has shown that acquiring an L2 in infancy is usually associated with fluent speech, native accent as well as effortless language processing (Birdsong & Jan Vanhove, 2016). Individuals who acquired an L2 in childhood are hard to differentiate behaviourally from native speakers (although neurological imaging techniques show some differences, Grant et al. (2022)) as they obtained ultimate attainment of that language. However, individuals who began learning the L2 in adulthood often experience an accent and grammatical errors (Hartshorne et al., 2018). Longitudinal studies have shown that second language learners who acquire an L2 early in life tend to outperform their later learning counterparts in terms of ultimate attainment (Vanhove, 2013). Flege and colleagues (2002) conducted a study to examine bilingual dominance in four groups of 18 Italian-English bilinguals. The groups were selected on the basis of age of arrival (AOA) in Canada (early arrival: 2-13 years; late arrival: 15-26 years) as well as the percentage of use of their L1 (Italian) (Low L1:1-15%; high L1 25-85%). The researchers found that the bilinguals who arrived in Canada as young adults who continued to use Italian were most likely to be Italian dominant. They also found that dominance in Italian was connected with higher levels of performance in Italian and lower performance in English. Bilinguals who arrived later in Canada (15-26 years) with high usage of Italian (25-85%) were reported to produce English sentences with detectable accents. However, bilinguals who arrived in Canada early (2-13 years) and who were English dominant did not have foreign accents. Thus, the concept of language dominance in bilinguals is a multi-faceted dimension of language use and experience. Age of acquisition, age of arrival, and frequency of use are all factors that is associated with this construct.

In addition, bilingualism can be classified as additive bilingualism and subtractive bilingualism. Additive bilingualism occurs when an individuals' first language continues to be

learned and developed while they are acquiring a second language (Cenoz, 2003). Therefore, that L2 does not "replace" the L1 but is learned in addition to the L1. For instance, children who attend French immersion in school with their L1 being English are an example of additive bilingualism. Not only are they learning a second language, their L1 is also developing at the same time. In contrast, bilinguals who learn their L2 because they are required to either for school or for work are referred to as "subtractive bilingual". These individuals are often immigrants learning the societal language. For these learners, their L1 skills usually decrease or are lost due to the acquisition and frequent use of the majority language. The concept of "language loss" is widely used in the literature on bilingualism or L2 acquisition, although it is not measured or quantified in an empirical "pre-test/post-test" way. It is assumed that early bilinguals who learn the dominant societal language as their L2 will lose L1 skills in relation to native speakers of that language who are residing in the country of origin. Thus, researchers may measure perceptions of language proficiency and skills, and individuals' perceived language loss may be measured based on their self-reports.

Immigration and language

Canada has one of the highest immigration rates per population of any country in the world (Statista, 2022). With an annual rate of over 300,000 new immigrants per year, there were roughly eight million immigrants with permanent residence status living in Canada as of 2020 (Statistics Canada, 2021). Because of a large increase in international migration, there is also a rapid increase in the numbers of individuals adapting to the new host culture while maintaining their own heritage culture (Titzmann et al., 2015). Many immigrants encounter the need to adapt to disparate cultural domains, where they can successfully bridge the distinct cultural scripts together. For instance, language is an important factor that influences people's everyday lives. It

is important to acquire the dominant societal language, as proficiency in that language also leads to better job opportunities, and better integration into the new community (Isphording, 2015).

Although it is important to preserve one's first language as that language aids in the preservation of one's tradition and heritage (Vallance, 2015). Many immigrants face language barriers. When a bilingual individual utilizes one language, the other language is also active at the same time (Cook, 2003). This may result in complications as bilinguals may experience persistent linguistic competition that may lead to language difficulties (Hernandez & McWhinny, 2010). For example, knowing two or more languages can lead bilingual individuals to name certain words or pictures more slowly as compared to their monolingual counterparts (Gollan et al., 2005). It may also increase the tip-of the tongue phenomenon where an individual cannot fully recall a familiar word but may remember certain details about it or may still recall words that have similar meanings or structures (Gollan & Acenas, 2004). However, because bilingual individuals' language systems are constantly competing and active, bilinguals have enhanced executive function skills that allow them to develop better cognitive skills such as attention and inhibition (Bialystok et al., 2012). Research has also shown that being bilingual has advantages such as enhanced processing of information compared to monolinguals (Kaushanskaya & Marian, 2012). Since the benefits of speaking more than one language may outweigh the challenges, many immigrants arriving in a new foreign country may want to maintain their L1 while acquiring the dominant language of the host country. Preserving one's L1 is often considered a positive factor and it's generally favored by immigrants (Cox et al., 2021). Thus, immigration policymakers, practitioners, and researchers often examine the concept of acculturation to understand the process of how relocating from one society to another may influence development in children and adolescents (e.g., Parke & Buriel,1998).

Effects of first language schooling on second language.

As the concept of globalization is gaining popularity and immigration rates are increasing, people from disparate cultures are coming into contact with each other, leading to the need for communication between different cultures (Hamers & Blanc, 2000). Therefore, learning an additional language or being bilingual can facilitate individuals' academic and professional success. This pattern can be seen in the school systems around the world, where bilingualism is often emphasized in education. Thus, schools across Canada are adjusting their instructional plans in favour of bilingualism by educating individuals to thrive in our diverse societies (Madrianan, 2014). French immersion is an excellent example where most schools in Canada offer this program for students from grade 1 to 9. University courses also offer language classes for students. Historically, literature regarding age and language proficiency suggested that the level of proficiency in the L2 would increase if children were exposed to bilingual education from their first years of school (Piaget & Inhelder, 1969). According to Collier (1988), age of acquisition is a major factor in the acquisition of a second language (L2) for school. He suggested that after puberty, adolescents are likely to develop complete second language proficiency while having an accent. However, when schooled only in the L2, children who are 8 to 12 years on arrival are the most advantaged in learning the second language.

A study conducted by Madrinan (2014) examined whether the usage of the L1 in the classroom would increase the comprehension and proficiency of the second language acquisition process. The study was conducted in a Colombian international school with an English immersion program for kindergarten students. Students were either taught by only using English as the language of instruction or taught by using both Spanish and English. Madrinan (2014) found that students benefitted more from using their first language in the classroom, as the L1

concepts were transferred from their L1 to the new language (English). This study highlighted the significant effect that the L1 has during the second language acquisition process, and the importance of developing the first language during the first year of immersion school. The author also suggested that individuals who possessed strong first language skills were able to learn the L2 more efficiently and easily because of the language transfer.

Developed by Cummins (1978), the Linguistic Interdependence Hypothesis revealed the relationship between the first language proficiency and learning a second language. He proposed that first language (L1) knowledge can be transmitted during the process of learning a second language (L2). Cummins suggested that L1 linguistic proficiency and skills are essential for the development of the corresponding L2 abilities. The competence in acquiring an L2 is correlated with the competence that was already developed in the L1 when the exposure to the L2 began. Since cognitive academic proficiency in the L1 and L2 are heavily interdependent, individuals who acquired more cognitive skills through the usage of their L1 before learning the L2 will learn the L2 faster than individuals who have not (Cummins, 1981). Thus, if individuals already possess competency in their L1 when being exposed to the L2, they will learn the second language more rapidly. A study conducted by Mehrabi (2014) supported this hypothesis. The author examined the effects of second language writing ability on first language writing ability. Two groups of university students who were majoring in English and non-English were selected to write a 200-word paragraph on a topic of their interest. The students who were majoring in English had to complete a course in writing that involved essay and paragraph writing in English. After the completion of this course, both groups were instructed to compose a paragraph on the same topic in their first language. Later on, the paragraphs were scored on a scale of 0 to 20 based on vocabulary choice, structure of the paragraph, punctuation, reasoning, connected ideas,

and style. The author discovered that not only is L2 learning effective on the development of L1 skills, writing ability in the L2 also influences L1 writing ability. The results of this study indicated that the English major students were able to write in their L1 better, suggesting that there is a transfer of knowledge across languages.

Immigration and acculturation

Recent research has revealed that simple models of cultural adaptation may fail to explain the complex nature of acculturation (Schwartz et al., 2010). Acculturation is broadly conceptualized as the set of cultural and psychological changes that occurs after the contact between two cultural groups and their members (Berry 2005). Historically, literature on cultural adaptation suggested that immigrants experience a gradual behaviour shift from their heritage culture to the dominant societal culture with complete assimilation as the final stage of adaptation (Gordon, 1964). However, this cultural adaptation model has been deemed too simplistic as immigrants may successfully be immersed in and adopt both their heritage culture and the dominant culture in their new country. Previous literature mainly focused on the cultural changes experienced by immigrants, and they suggested that integration to the new culture allows immigrants to retain their heritage culture while also adopting to the mainstream culture of their new country (Sam et al., 2016). Some researchers argue that it is critical to maintain one's heritage culture as the essence of cultural heritage is the transmission of knowledge and experiences that was accorded from one generation to the next (Tudorache, 2016).

Cultural heritage is an important component of one's identity that permits individuals to have a connection to certain beliefs, customs, and values. Language is one of the essential cultural factors that serves as a communication device and a mark of expressing one's cultural identity. Losing one's heritage culture could be detrimental as one may experience the loss of

their cultural identity and lose links to members sharing the same cultural identity (Ennaji, 2005). In fact, empirical research has shown that immigrant youth's well-being increases when they maintain their heritage culture (Sun et al., 2020). However, social, and psychological changes may occur as one relocates from their heritage culture to a new culture. Many immigrants may feel the need to adapt to their new environment to grasp a sense of belonging to their new country. For instance, acquiring a new language, adopting various new customs and values are all instances of acculturation. This is especially common among children and youth, as they are more inclined to become acculturated at a young age. Hou and colleagues (2016) conducted a study by using Statistics Canada's 2013 General Social Survey that focused on 7003 immigrants who have landed in Canada between 1980 and 2021. The authors administered a questionnaire that assessed individuals' acculturation profiles as measured by their sense of belonging to Canada and/or their heritage culture. The study examined whether the immigrants felt a strong sense of belonging to only their native culture; a strong sense of belonging to Canada only; a strong sense of belonging to both Canada and their heritage culture; or a weak sense of belonging to Canada and their heritage culture. The authors found that those who had a strong sense of belonging to Canada but not their heritage culture had greater exposure to the Canadian society, immigrated to Canada at a younger age, and spoke English more frequently at home. Thus, the factors above are all features of being acculturated to Canadian society.

Both immigration and acculturation are personally transformative experiences for many people. Individuals relocate from one country to another for various reasons such as employment opportunities, political instability, or educational factors. In addition, children and youth often migrate with a parent and typically do not have much choice regarding their migration (Cote, 2020). This leads to various issues regarding immigration and acculturation during childhood for

these individuals. Much of the research on immigrant children and youth's development has

focused on second language acquisition and their academic performance, with scarce literature

on the role of cultural factors. Therefore, it is critical to conduct research on immigrant youth's

cultural integration and identification. Children and youth who emigrated to a foreign country

may encounter various obstacles as they begin to integrate into their new country of

residency, such as learning the dominant culture's language. As they begin to adjust to their host

country, acculturation often occurs through the adoption of the host country's values and norms.

Adjusting and integrating to one's new country has various benefits such as cultivating

meaningful connections in their new communities and enhancing social mobility and economic

opportunities for newcomers in their host country (Holohan, 2012). However, acculturation

involves changes in culture, socialization, and religious practices etc., which may result in a

negative consequence for individuals' cultural identities. Costes and Pungello (2000) suggested

that acculturation that isolates children from their own cultural heritage is harmful and that

preserving a healthy cultural identity may foster a positive view of oneself and enhances their

educational development. Acculturation is especially prominent in younger children as they have

relatively weaker and less-defined cultural identities in relation to their heritage culture when

compared to adults. Since children have fewer experiences with their heritage culture than adults,

culturally related customs, beliefs and values are not fully acquired in these children at the point

of relocation. Thus, children often acclimatize easily and more exclusively to a new host culture

than adults would, and the consequences of acculturation and assimilation may result in a loss of

ethnic and cultural identity that eventually leads to the loss of a link to their heritage culture.

The literature has also shown that immigrants or ethnic minorities who experience acculturation

are at an increased risk of poor mental health outcomes. Kaplan and Marks (1990) published the

results of a study that explored the relationship between acculturation and psychological distress in Mexican Americans. By measuring individuals' language, ethnic identity and psychological distress, the authors found that as acculturation increased, psychological distress dramatically increased in the Mexican American young adults. However, research has shown that promoting ties to individuals' heritage culture may contribute to relatively positive mental health outcomes for disconnected and isolated members of the community (e.g., Power & Smyth, 2016). Preserving one's cultural heritage is central to protecting one's well-being. Since culture is the embodiment of the assorted beliefs and customs that outline human societies, cultural heritage is essentially one of the primary elements that makes life meaningful. Not only that, but culture is also critical to how individuals understand and perceive themselves and the world (Norton, 2013). Becoming aware of one's unique identity enables individuals to construct and characterize themselves. Thus, embracing one's heritage culture plays an essential role in individuals' well-being, and it provides a connection to one's tradition, values and beliefs.

Language acquisition and attrition

Language acquisition is a critical component in the development of cognition as individuals use language to learn and interact with those around them. Language is an essentially human trait, as almost all humans communicate via a language and language is the primary source of learning and of knowing about other people's thoughts (Pinker, 1994). Many individuals who migrate from one country to another may be required to learn another language. When they arrive in their new host country, they may face various cultural and language barriers such as difficulty adjusting to their new community and challenges with learning a second language. Previous literature has suggested that children and youth's language proficiencies in the host country play key roles in developmental, cognitive, and social factors.

For instance, language proficiency significantly affects immigrant integration as it increases job opportunities and fosters social and political participation (Isphording, 2015). The L2 skills of immigrants usually increase with the duration spent in the host country via exposure, as well as explicit teaching and learning of the dominant language of the society. Acquiring a second language is often a complicated process as one must learn the lexical items, pronunciation, morphology, as well as the appropriate way to use those words to construct sentences and meaning in that language (Gass & Selinker, 2001).

Language is both a fundamental component of communication and a key aspect of one's identity (Baldwin, 1997). Language plays an important role in culture, as it is how individuals communicate with each other and establish bonds in a relationship, while promoting a sense of community (Jiang, 2000)**.** Some researchers consider that culture would not be possible without language because of the reciprocal relationship between the two. Thus, language and culture are often considered to be inseparable because they are intricately intertwined. Additionally, language transfers important traditions of individuals since it contains their historical backgrounds and their approach to life in their ways of thinking and living (Jiang, 2000). Nida (1998) suggested that language and culture are two symbolic systems, where everything we say conveys a meaning. However, every language form we use conveys disparate meanings that are not in the same sense because language is associated with culture. For instance, when someone says the word *lunch,* many North American individuals may refer to sandwiches or pizza, but East Asian people will most likely think of steamed bread or rice when they encountered this word. Furthermore, the word *dog* in English and the character **"***gou***"** in Chinese denote the same type of animal. Most people from North America would associate dog with "a man's best friend", or a good companion as dogs are usually kept as a pet in North America. The majority of

Chinese people would link **"*gou*"** with watchdogs, guarding the house from robbers or buglers. Therefore, English words and their Chinese translations or vice versa can evoke differing images and associations since they are not always equivalents.

A survey conducted by Jiang (2000) illustrated the intimate relationship between language and culture. In this experiment, a survey of word associations was utilized for native English and native Chinese speakers. In this survey, a list of ten words such as "friend," "job", "food," and "love" were included as prompts. Participants were asked to add six additional words or expressions that they associated with each of the ten chosen words, resulting in 60 words in total. The author discovered that the words filled in by the native Chinese speakers conveyed Chinese culture, while the items written by the native English speakers conveyed Western culture. For example, specific "food" items listed by the native English speakers were 'hamburgers', 'ice cream', 'pizza' etc. On the other hand, 'noodle', 'steamed bread', 'rice' are the representative food items listed by the native Chinese speakers. The author also found that native Chinese speakers were more prone to associate the word *food* with more exclusive food items than the native English speakers. The results obtained from this study supported the interrelationships between language and culture. Because language is such an important and visible indicator of cultural origin, it has been documented as an essential approach to preserve connections with one's cultural past and to protect one's cultural uniqueness in the present (Lenore & Lindsay, 2006). Griswold (2004) suggested that to understand a certain group of people, one must examine the expressive form such as the language people use to represent themselves. If that language is lost, then the desirable knowledge and customs that people hope to preserve are also lost, as the inherited traditions are no longer transmitted among the speakers.

Age of acquisition and language attrition

Research has indicated a biologically rooted critical period for second language acquisition that hinders older learners from attaining native-like competency in a second language (Hakuta et al., 2003). Historically, this hypothesis was proposed by Penfield and Roberts (1959) and was later refined by Lenneberg (1967). Lenneberg suggested that a critical period starting at the age of 2 and ending around puberty was a period for optimal language acquisition. Later research has supported this claim as empirical studies showed second language (L2) learners who acquired an additional language earlier in life tended to outperform later learners in terms of ultimate attainment (Vanhove, 2013). Age of acquisition (AoA) refers to the age at which learners are immersed in the L2 context (Birdsong, 2006). Various researchers suggest that AoA is associated with L2 outcomes as AoA is the strongest predictor of ultimate attainment (DeKeyser & Larson-Hall, 2005). Previous research found evidence of a connection between age-related morphological changes and the cognitive process that can facilitate L2 acquisition. In fact, Birdsong (2006) suggested that age related declines in dopamine levels lead to numerous cognitive deficits that might hinder L2 processing and acquisition. Although some research suggests that AoA is a strong predictor for individuals' L2 attainment, DeHouwer (2007) suggested that individuals who grew up in a bilingual environment from an early age may not necessarily successfully acquire two languages that they are hearing. She illustrated the importance of home environment factors, where disparities in parental language input patterns are associated with differences in what language the child will acquire. Children who grew up with two languages acquire and learn the majority language, while the minority language is the one that is at risk of not being spoken. The ability to successfully acquire both languages is heavily dependent on the parental language input patterns. For example, parents or guardians who speak both languages may restrict the usage of the majority language so that only one parent

uses it. The one person-one language scenario may increase the chance of the child successfully acquiring both languages by separating the languages by person early in the language learning process. This practice may prevent confusion and code-mixing in their bilingual children (Barron-Hauwaert, 2004).

Recent empirical studies on first language attrition have shown results suggesting that language attrition in children is characterized by a rapid loss of their L1 (Isurin, 2000). Younger learners are particularly prone to lose a language if they are not exposed to it as compared to older individuals. Thus, children are considerably more susceptible to losing their first language than adults, resulting in a noticeable deterioration of their L1 (Emanual, 2009). This commonly occurs when children have fewer opportunities to interact with speakers of their first language while acquiring a second language, which interferes with the acquisition of the L1. Hence, this phenomenon commonly occurs among immigrants who relocate to another host country, where a different dominant language is being utilized.

The consequences of L1 loss may lead individuals to experience a loss of ethnic and cultural identity that eventually leads to the loss of a link to their heritage country. The intricate connection between culture and language is illuminated in Sperber and Hirschield's (2007) theory, where they suggest that culture ascends from Social Cognitive Causal Chains (SCCC), facilitating relationships between individuals, as the SCCCs permit stabilizing practices within a certain community. These SCCCs comprise of linguistic and pragmatic variables, and if immigrants detach from these SCCCs of the L1 community, then they will no longer have support to stabilize their L1 practice and representations. Preserving and communicating in the L1 can strengthen ties with family members, especially those who may not be able to speak English. If L1 skills are impaired or lost, essential links to family members may be lost. This L1

loss would lead to the isolation of certain family members, along with the loss of particular desirable cultural traditions and positive aspects of cultural identity. Thus, it is critical to maintain one's L1 as it is essential to individuals' identity and can provide a positive self-concept.

Multigenerational living arrangements

A potential source of L1 exposure is residing in multigenerational homes. The literature has suggested that family structure in childhood affects early cognitive development and performance in adulthood. Children's family social contexts impact their lifelong health outcomes (McEwen & McEwen, 2017). Family structure is a strong predictor of children's health and well-being in adulthood (e.g., Thomas et al., 2017). Family structure refers to the combination of members in a household who are linked by bloodline or marriage (Pasley & Petren, 2015). The research on the impacts of family structure on cognitive development has mainly focused on parents and their offspring (two-generations) with sparse literature looking at multigenerational households. Mutigenerational living arrangements refer to households that include three or more generations from the same family. For instance, parents or in-laws, children and grandchildren residing in the same household is referred **t**o as a multigenerational household. In Canada, the multigenerational home environment is increasing steadily, with 2.2 million Canadians currently residing in multigenerational homes (Statistics Canada 2017). In fact, households comprised of three or more generations of the same family increased the fastest (+37.5%) of all household types in Canada since the latest census. According to Muennig and colleagues (2018), residing in multigenerational home environments has numerous benefits. They concluded that living in a multigenerational household may foster improvements in health and longevity for the younger and older generations, as well as being

related to increased social, psychological, and financial capital. People living in these home arrangements usually share common resources such as food, electricity, rent, transportation, and childcare. This can reduce the cost of living as compared to living alone or in a nuclear family arrangement.

Theoretically, by sharing these common resources, residing in a multigenerational home environment can lead to improvements in the lives of the family members, such as moving to a larger house in a safer neighborhood, and dividing financial expenses. Moreover, these living arrangements also increase financial resources, generate social capital, and elevate individuals' well-being (e.g., Cohen & McKay, 1984, Adler & Kwon, 2002). Besides the convenience and economic benefits of multigenerational living arrangements, the sense of familial and cultural connection that is cultivated by residing in a multigenerational home environment helps to sustain the relationship between family members. Culture and ethnicity also are important factors that accompany living arrangements and their potential benefits. For instance, research has shown that Latino immigrants had higher rates of living with extended family than non-Hispanic White immigrants (Wilmoth, 2001). In Canada and the U.S., the growing numbers of multigenerational households has been attributed to an increase of foreign-born groups for whom it is more common to reside with one's relatives. Since many foreign-born groups are more accustomed to these living arrangements, they might obtain the benefits of residing in multigenerational homes more than native-born groups (Muennig et al., 2018). In 2011, more than 8% of the immigrant population aged 45 and over were living with grandchildren, as compared to less than 3% of their Canadian-born counterparts. Additionally, 53% of immigrants arriving in Canada at age 65 or older were co-residing grandparents (Statistics Canada 2011).

Grandparents or parents arriving from abroad tend to be sponsored by the Family Reunification Program established by the federal government of Canada. In this program, their sponsors (family members) must financially support them for the first ten years of residence as they are not eligible for government income assistance within these years. Therefore, many immigrants reside in a multigenerational household due to the Family Reunification Program that supports older immigrants in enhancing financial stability as they settle in their new country. In fact, immigrants accounted for 54% of all co-residing grandparents in 2011 (Statistics Canada, 2016). Individuals who reside in multigenerational households often support each other. Not only do younger generations provide additional care for their senior relatives, but they may also benefit from the companionship of their extended family members. On the one hand, the younger generation residing in a multigenerational household may help reduce social isolation of older adults by establishing a proximate familial social network that could potentially invigorate and reduce the loneliness of elders. On the other hand, elders may also provide a stable, safe environment for children that could solidify an important family relationship. In fact, past literature has suggested that multigenerational living arrangements can increase social, psychological and financial capital (Kemper & Murtaugh, 1991).

An empirical analysis conducted by Lee and colleagues (2021) examined the benefits of living in multigenerational households in terms of individuals' cognitive functioning. By utilizing data from the childhood family history data in the Health and Retirement Study (1998-2014), the authors examined different types of family structures, specifically (two-parent households, two-parent households with grandparents, single-parent households, single-parent households with grandparents, and grandparent-headed households) to assess cognitive functioning and health conditions over time. Data were drawn from the Health and Retirement

Study where a range of cognitive tests was administered, with the first core interview being conducted in 1992 and subsequent interviews filed every two years. In addition to the core interviews, the administrators of HRS distributed surveys to collect information regarding the participants. Respondents' childhood SES and health were first measured in the 1998 core interview, and in 2015-2017, the respondents' answered a Life History Mail Survey (LHMS) that included their family history and various childhood events. Additionally, nine waves of HRS (1998-2014) were analyzed along with the 2015-2017 LHMS with a special focus on the role of grandparent co-residence during childhood. The authors discovered that grandparents' co-residence led to a socially enriched home environment where resources were allocated towards members of the family. In addition, the co-residency offered protective factors such as economic advantage in terms of children's early cognitive development that could persevere throughout their adulthood. They also discovered that childhood living arrangements were significantly correlated with cognitive functioning. Individuals who grew up in multigenerational homes displayed higher levels of cognitive functioning compared to those from two-parent households. In addition, those living with a single parent and grandparents also showed higher cognitive functioning compared to those from two-parent households. Individuals who lived with a single parent alone were the most disadvantaged, displaying lower cognitive functioning as compared with their counterparts. While households that deviate from the two-parent households have been previously considered as undesirable for early cognitive development, emerging research has shown that co-resident grandparents may be beneficial for children's development that persists in later life (Deleire & Kalil, 2002).

Grandparent co-residence could impact cognitive development by promoting supportive and engaging home environments that increase the ties with social interaction (Rogoff, 1990). By

residing in the same household, grandparents can also provide their grandchildren emotional

support that can help buffer familial stress as well as provide caregiving assistance to parents that

may positively affect children's behavior and development (Monserud & Elder, 2011). Along

with the socioeconomic advantages of residing in multigenerational households, other positive

implications are associated with these living arrangements. For example, multigenerational living

arrangements offer socioemotional support that may enhance mental stimulation that benefits

cognitive development, as well as promoting strong familial relationships (Kivett, 1991).

However, little research has involved familial structure and language identity in

multigenerational living arrangements, nor has research looked at the role of sociocultural factors

that may affect L1 maintenance.

The current study.

The current study aimed to assess the factors such as age of arrival (AOA) to Canada,

enculturation/acculturation, living in a multigenerational home environment, and perceived

language skills in relation to each other and to language dominance. These factors are considered

to be related to first language loss (L1 loss) in individuals from immigrant backgrounds,

particularly, examining the relationship between acculturation and L1 loss. This study also

examined whether residing in a multigenerational home environment would help preserve the

participants' first language skills (L1 skills). The study was conducted through an online format

that included survey measures and measures that looked at individuals' language skills in both of

their first language (L1) and in English. The research targeted undergraduate students who

immigrated to Canada or who are from immigrant backgrounds and learned a language other

than English as their first language. The primary research question assessed in this study was:

What is the relationship between enculturation/acculturation and L1 loss? Specifically, is

enculturation related to an individual's L1 proficiency? Is acculturation related to an individual's

L2 proficiency? In addition, we were also interested in determining whether those who live in a

multigenerational household would have better proficiency in their L1 compared to their

counterparts who do not reside in a multigenerational home environment. Language dominance

was also examined in regards with participants' self-perceived language proficiencies as well as

enculturation, acculturation, and the multigenerational home environment variable. Finally, we

examined if there any differences between participants who have completed some of their

education in their L1 versus bilinguals who received all their education in Canada.

Methods

Design

The present study had a between-subjects design, in which each participant completed the

survey measures through Qualtrics Survey Software and a one-on-one a testing session on Zoom

video conference technology. This one-on-one testing session included a Verbal Fluency

measure that was audio recorded through Zoom to examine individuals' vocabulary knowledge

in both their L1 and in English. Participants' level of cultural immersion in both their native

culture and the dominant culture of society (Canadian culture) were also measured along with

their L1 and English proficiencies. In addition, the individual measures of acculturation were

analyzed using SPSS for multiple regressions to determine how the language proficiencies of the

participants are related to acculturation. Research assistants at the Language and Literacy lab

helped with transcribing and coding the different languages of the participants. For our study, we

had 103 participants partaking in the Zoom task, with 24 languages being recorded. Some of the

languages include Arabic, Chinese, Gujarati, Farsi, Urdu, Spanish, Russian, Punjabi, Bosnian

etc. The study also hoped to examine whether living in a multigenerational home arrangement

will increase participants' L1 skills. The present study was reviewed and approved by the University Research Ethics Board (REB#6880).

Participants.

One-hundred and seventy-seven undergraduate students (N=177) with immigrant backgrounds from Wilfrid Laurier University and other Canadian universities were recruited for the study. Participants who speak a language other than English as their first language were recruited through online platforms such as social media and PREP (a Psychology credit program at Wilfrid Laurier University) to participate in the present study. The sample consisted of 124 females and 53 males (*M* age= 19.73 years, *SD*= 3.15). The participants had different experiences prior to entering university with 94 participants attending school in a country other than Canada, and 83 participants only attending school in Canada. In addition, a total of 127 participants responded to the age of arrival question: 49 participants were born in Canada; 35 participants moved to Canada between the age of 1 year to 10 years of age; and 43 participants moved to Canada between the age of 11 and 20. Furthermore, 39 participants reported having grandparents residing in the same households as them. A total of 33 different languages were reported as the participants' first languages (e.g., Spanish, most Spanish speakers are likely from South and Central America). Other languages included Mandarin, Punjabi, Farsi, Arabic, Urdu, Vietnamese, Hindi etc. In terms of percentages of the sample, 34.7% of the languages were from Southern Asia, 25.7% of the languages were from Eastern Asia, 13.2% of the languages were from Western Asia, 9.7% of the languages were from Southern Europe, 6.9% of the languages were Eastern Europe, 6.9% of the languages were from Western Europe, 1.4% of the languages were from East Africa, and 1.4% of the languages were from central Asia.

Materials.

Prior to the one-on-one test session on Zoom, participants completed a series of measures online using Qualtrics Survey including a brief Family Language Questionnaire, the Bilingual Dominance Scale, Acculturation Scale, and the Vocabulary Size Test. Participants also completed a Verbal Fluency measure during the Zoom testing sessions to examine their vocabulary knowledge in their first language (L1) and in English. The Family Language Questionnaire asked qualitative questions regarding the participants' demographic information. The Bilingual Dominance Scale had a point system where points were added to two separate fluency scores, one for L1 and the other for L2. These separate scores were then combined by subtracting one from the other. The Acculturation Scale also had a point system where each item is scored on a Likert scale from 1 to 5, with low scores indicating orientation to their heritage culture while high scores indicated an Anglo orientation. The Vocabulary Size Test had 100 multiple choice items, and participants would obtain a score for total correct responses obtained. Lastly, the Verbal Fluency Measure counted the total number of words produced by participants in their L1 and in English.

Family language questionnaire. The students filled out an open-ended 12 item questionnaire that asked for their demographic information such as their age, length of residency in Canada, heritage culture, and first language learned. Furthermore, the questionnaire also consisted of several questions regarding family demographics such as household composition, language skills of parents/guardians, and languages used among family members in the home and outside of home.

Bilingual Dominance Scale. This measure was adapted from a scale created by Dunn and Fox Tree (2009), the Bilingual Dominance Scale assessed the dominant language of the bilingual participants. This scale has 11 questions being utilized to quantify three main criteria in

determining language dominance by examining the percentage of language use for both languages, comfort, and age of acquisition. For instance, one question in the Bilingual Dominance Scale asked participants "If you had to choose one language to use for the rest of your life, which language would it be", and participants wrote down the answer that was most relevant to them. This measure was found to be highly reliable at α= 0.81.

Acculturation Rating Scale- II. Adapted from the Acculturation Rating Scale for Mexican Americans (ARSMA-II), this measure consisted of 26 questions that quantified the construct of acculturation. The scale measured immersion in each culture along three essential variables: ethnic identity, language, and ethnic interaction. The 5-point scale assessed participants' levels of acculturation to comprehend the cultural change among the participants. For example, one question in the scale asked participants "I like to think of myself as a Canadian", and participants must select from 1 to 5, with 1 indicating "not at all", and 5 indicating "almost always". Questions regarding the participants' heritage culture included "I enjoy listening to music in my native language". The test has an alpha coefficient of 0.88.

Vocabulary Size Task. The Vocabulary Size Test (VST version A) is designed to measure the second language learners' receptive vocabulary size in English (Nation & Beglar, 2007). This test assessed test-takers' knowledge of a word form and its concept knowledge, as this test examined decontextualized knowledge of the word. Containing 100 multiple-choice items, this measure asked participants to select the correct word term with the closest meaning to the key word in the question. For example, "The children were pretending to be <dinosaurs>", with four choices of "a: robbers who work at sea, b: very small creatures with human form but with wings, c: large creatures with wings that breathe fire, d: animals that lived a long time ago". The word '*dinosaurs*' was in brackets and test takers were required to select the best definition of

each word from four choices. The initial items included high frequency words, while the later items were low frequency words. Participants were instructed to complete the test at their own pace as this test was a measure of vocabulary knowledge and not fluency. Test administration usually took around 30 minutes to complete the 100 items test.

Verbal Fluency Test: Zoom session. After completing all the surveys and questionnaires on Qualtrics, each participant was emailed a Zoom link for a one-on-one Zoom session. During this session, a Verbal Fluency Test (VFT) was conducted by the researcher. This test was administered in participants' first language to determine L1 fluency and in English to compare with L1 skills. This measure was also used as a gross measure of participants' vocabulary knowledge in their L1 and in English. Participants were instructed to produce as many words as possible for two semantic categories (animals and foods), with 30 seconds being provided for each category for each language. This test was audio recorded via Zoom to allow for later scoring.

Procedure

Participants were recruited to participate in the present study through online social media platforms such as Facebook and PREP, the university participant pool platform. Participants were told that the study was designed to explore L1 loss and maintenance in adolescents and young adults who are from immigrant backgrounds and who had learned a language other than English as their first language. Due to COVID-19, the present study was conducted online where participants were provided with a link to the measures on Qualtrics to complete on their own time.

After signing up for the present study on PREP, students were automatically provided with a link for the Survey to complete the study. If participants were recruited from social media

or other platforms (recommendation from friends, ads etc.,) the researcher sent the study link to their email. Participants first read and clicked agree to the online consent form before completing the measures. They completed the Family Language Questionnaire that asked for their demographic information such as age, residency in Canada and their first language. After completing the Family Language Questionnaire, students filled out the Bilingual Dominance Scale that assessed the language dominance of the bilingual participants, as well as the percent of language use for both their L1 and English. After that, they completed the Acculturation Scale II that assessed their cultural affiliation. Lastly, participants completed a Vocabulary Size Test that was conducted in English to measure their English receptive vocabulary knowledge. After answering the measures on the surveys, participants were contacted by the researcher to determine a time that was best suitable for the participant and the researcher to proceed on Zoom to finish the last component of this online study. During the Zoom sessions, participants were asked to name as many words as possible for animals and foods within 30 seconds for each category. In addition, they were asked to use both of their L1 and English to name these two categories separately. The Zoom session took approximately 5 minutes and was audio recorded with participants' consent. After this session, participants were thanked for their time and received 1.0 PREP credit for taking part in the study. Participants who were recruited on social media were provided with a five-dollar gift card to Tim Horton's. The researcher did not need to translate any tasks or consent forms in the students' first languages (i.e., other than English) as the participants were all university students enrolled in English language degree programs in Canada. Thus, the participants should have a high level of proficiency in English. However, the high proficiency in English did not hinder the results for the current study, as the present project aimed to examine the relationship between acculturation and individuals' L1 skills.

Transcription and coding. The one-on-one Zoom session that was audio recorded was transcribed verbatim. Members of the Language and Literacy Lab helped with some translation of this tasks as they spoke the languages that were used in the Verbal Fluency Test. For instance, the principal researcher translated any responses in Chinese to English. Twelve languages out of the twenty-four L1s were translated verbatim by the research assistants.

Planned Analysis. Statistical analyses were completed using SPSS Statistics Version 27. Pearson's correlations were conducted to determine if there were any significant relationships between the variables of interest such as acculturation, enculturation, multigenerational home environment, L1 proficiency and English proficiency. Group comparisons were conducted to analyze whether those who lived or live in a multigenerational home environment will have better L1 skills than participants who did not reside in those households. T-tests were conducted comparing participants' who grew up in multigenerational homes to participants in nuclear families on measures of language and acculturation. A three-way ANOVA was conducted to examine the differences on measures for participants a) who were born in Canada, b) who arrived in Canada between 1-10 years of age, and c) who arrived in Canada between 11-20 years of age on self-reported language proficiencies, enculturation, acculturation and English vocabulary. Independent samples t-tests were also conducted to compare the differences between participants' who attended some schooling in their L1 versus participants who completed all their schooling in Canada, as well as comparing participants who were L1 dominant, English dominant or balanced bilinguals.

<div align="center">**Results**</div>

Descriptive Statistics

Means and standard deviations were calculated for the key variables. Ceiling effects were found for participants' self-rated English speaking, English writing, English listening, and English understanding skills. In addition, ceiling effects were also found for participants' self-reported L1 speaking, listening and understanding skills. However, individuals' self-reported L1 writing skills were not at ceiling. (See Table 1). As a result of the ceiling effects and low variability, the results that include the self-report measures should be interpreted with caution and all associated analyses should be considered exploratory. No floor or ceiling effects were found from visual inspection of the data for acculturation and enculturation measures as well as the vocabulary scores. The inflated self-ratings of the language proficiencies are inconclusive with bias in the scores and Type I errors. However, the study is largely exploratory, and the goal of the present research is to understand possible factors that are related to L1 loss in depth. The study aimed to clarify the nature of language loss and language acquisition in regards with the variables that were examined and lay the foundation for further research in the area of L1 loss and maintenance.

Relations among variables.

There were several significant correlations among the variables of interest (see Table 2). A Pearson correlation was computed to assess the relationship between participants' self-rated English proficiency (English speaking skills, writing skills, listening skills, and understanding skills), self-rated L1 proficiency (L1 speaking skills, writing skills, listening skills, and understanding skills), multigenerational home environment, enculturation, acculturation, and English vocabulary scores. Participants' self-reported English and L1 skills were all correlated with each other, $p<.001$. We also examined whether residing in a multigenerational home would have a relationship with participants' language skills. Pearson correlation indicated a non-

significant relationship between the total number of relatives residing in home for the English

language skills as well as L1 skills (see Table 2).

Total enculturation score: There was a negative relationship between participants'

enculturation score and self-ratings of English speaking skills, $r(176)=-.220, p=.003$,

participants' English listening skills, $r(176)=-.206, p=.006$ and English understanding skills,

$r(176)=-.205, p<.006$. However, the enculturation score was not significantly correlated with

participants' English writing skills. In contrast, the participants' enculturation score was strongly

correlated with L1 speaking skills, $r(176)=.394, p<.001$, L1 writing skills, $r(176)=.505, p<.001$,

L1 listening skills, $r(176)=.311, p<.001$, and L1 understanding skills, $r(176)=.355, p<.001$.

Total acculturation score: Pearson correlations showed a positive relationship between

participants' acculturation score and participants' English speaking skills, $r(176)= .452, p<.001$,

English writing skills, $r(176)=.408, p<.001$, English listening skills, $r(176)=.547, p<.001$ and

English understanding skills, $r(176)=.500, p<.001$. In addition, the acculturation score was

negatively correlated with participants' L1 speaking skills, $r(176)=-.194, p=.010$ and L1 writing

skills, $r(176)=-.212, p=.005$.

Total vocabulary score and total acculturation score: The relationship between L2

vocabulary and acculturation was examined. Results showed a positive correlation between

participants' total English vocabulary score and their acculturation score, $r(176)=.187, p=.034$.

Comparisons across three groups based on age of arrival.

English proficiency and arrival to Canada. Levene's test was conducted to determine

if there were equal variances across groups. For the post-hoc analyses a Bonferroni correction

was used when equal variances were assumed, and a Games Howell correction was used when

unequal variances were assumed. A 3-way between groups ANOVA was performed to examine

the effects on participants who were born in Canada, arrived in Canada between 1-10 years of age, and participants who arrived in Canada between 11-20 years of age on self-reported English proficiency (English speaking, writing, listening, and understanding skills, see above for caveats regarding these variables). Three-way ANOVA results revealed a statistically significant difference in participants' self-reported English skills for the four items based on participants' arrival groups (F (2,173)=2.79, p<.001; Pillai's Trace= .49, partial η^2= .24). Participants in different arrival categories differed significantly based on English speaking skills, (F (2,173)= 8.207, p<.001, partial η^2=.087) and English writing skills (F(2,173)= 5.145, p=.007, partial η^2 = .06) (See Table 3).

   Post hoc Bonferroni comparisons showed that participants' self-reported English-speaking skills for individuals born in Canada (M= 9.18, SD= 1.60) were significantly higher than participants who came to Canada between ages 11-20 (M=8.37, SD=1.54). In addition, individuals who came to Canada between the ages of 1-10 (M= 9.14, SD= 1.42) had significantly higher English-speaking scores than those who came to Canada between the ages 11-20 (M=8.37, SD=1.54). However, individuals born in Canada and individuals who arrived in Canada between the ages of 1-10 did not differ significantly on English speaking skills. Moreover, participants' self-reported English writing skills for individuals who were born in Canada (M=8.71, SD=2.56) was significantly higher than participants who came to Canada between the ages 11-20 (M=8.02, SD= 1.81). Participants' self- reported English writing skills for individuals who came to Canada between the ages of 1-10 years (M=9.03, SD=1.44) was also significantly higher than those who came to Canada between the ages 11-20 years (M=8.02, SD= 1.81). There were no statistically significant differences regarding those who were born in Canada and those who arrived in Canada between ages 1-10 years.

A Games-Howell procedure was conducted for post hoc analyses for English listening skills and English understanding skills as the Levene's test displayed violation of the assumption of homogeneity of variance. The Games-Howell post hoc statistic showed that participants' self-reported English listening skills for individuals born in Canada (M=9.71, SD= .74) was significantly higher than participants who came to Canada between 11-20 (M=8.84, SD=1.34). All other comparisons between participants' self-reported listening skills and arrival groups were not significant. Lastly, only individuals born in Canada (M=9.69, SD= .68) had significantly higher self-reported English understanding skills than those who arrived in Canada from ages between 11-20 (M=8.95, SD=1.13). All other comparisons between participants' self-reported English understanding skills and arrival groups were not significant.

L1 proficiency and arrival in Canada. Three-way ANOVA results revealed a statistically significant difference in participants' self-reported L1 proficiency based on their arrival groups. Participants in different arrival groups differed significantly based on their self-reported L1 speaking skills ($F(2,173)=8.721$, $p<.001$, partial $\eta^2 = .09$). However, there were no significant differences in participants' L1 listening and L1 understanding skills. A Games-Howell procedure was conducted for post hoc analyses as the unequal variances assumed for participants' self- reported L1 writing skills. *Post hoc* Bonferroni comparisons showed that participants' self-reported L1 speaking skills for individuals who were born in Canada was significantly lower than participants who arrived in Canada between the ages of 11-20 ($p<.001$). In addition, participants' self-reported L1 speaking skills for individuals who arrived in Canada between ages of 1-10 was significantly lower than participants who arrived in Canada between the ages of 11-20 ($p=.005$). Lastly, the Games-Howell procedure showed those who were born in Canada (M=6.06, SD=3.51) had lower self-reported L1 writing skills as compared to

individuals who arrived in Canada between the ages of 11-20 (M=7.86, SD=2.26). Participants

who arrived in Canada between 1-10 years of age (M=4.57, SD=3.55) also reported lower L1

writing skills than participants who arrived in Canada between 11-20 years of age (M=7.86,

SD=2.26).

Enculturation, acculturation, English vocabulary and arrival in Canada. Three-way

ANOVA results indicated a statistically significant difference in acculturation and English

vocabulary based on participants' age of arrival in Canada. Participants in different arrival

categories differed significantly based on acculturation ($F(2,173)=20.98$, $p<.001$ partial $\eta^2 =$

.20), and total English vocabulary score ($F(2,125)=6.13$, $p=.003$ partial $\eta^2 = .09$). *Post hoc*

Bonferroni comparisons indicated participants who were born in Canada had higher

acculturation scores than individuals who came to Canada between the ages of 1-10 ($p=.005$) and

those who arrived in Canada between the ages of 11-20 ($p<.001$). In addition, those who arrived

in Canada between the ages 1-10 also reported higher acculturation score than those who arrived

in Canada between the ages of 11-20 ($p=.022$). Interestingly, participants who were born in

Canada scored lower in their English vocabulary as to those who arrived in Canada between the

ages of 1-10 ($p=.002$). Participants who arrived in Canada between the ages of 1-10 scored

higher in English vocabulary as compared to participants who arrived between 11 and 20 years

of age ($p=.048$). A Games-Howell procedure was conducted for post hoc analyses for

enculturation. Participants who were born in Canada reported lower in enculturation than

participants who arrived in Canada between the ages of 11-20 years ($p<.001$). All other

comparisons between participants' enculturation and arrival groups were not significant**.**

Comparisons across two groups based on schooling in Canada.

English proficiency and schooling in Canada. An independent sample t-test was conducted to compare participants' self-reported English skills (English speaking, writing, listening and understanding skills) by group as determined by whether they attended school in a country other than Canada or not. There was a significant difference in participants' self-reported listening skills for those who attended school outside of Canada (M=8.95, SD= 1.38) and those who did not attend school outside of Canada (M= 9.59, SD= 1.02); $t(175)=-3.49$, $p<.001$. In addition, there was a significant difference in terms of participants' self-reported English understanding skills for those who attended school outside of Canada (M= 9.00, SD= 1.28) and those who did not attend school outside of Canada (M=9.58, SD=.93); $t(175)=-3.41$, $p<.001$ (See Table 4).

L1 proficiency and schooling in Canada. To examine the differences between participants' self-reported L1 proficiency (L1 speaking, writing, listening and understanding skills) and whether they attended school in a country other than Canada or not, an independent samples t-test was conducted. The t-test revealed that participants' self-reported L1 writing skills were significantly different for those who attended school outside of Canada (M=6.77, SD=3.12) and those who did not attend school outside of Canada (M=5.59, SD=3.50); $t(175)=2.36$, p=.039. No other differences were found between participants' attending school outside of Canada or not and their L1 speaking, listening, and understanding skills.

Enculturation and acculturation scores and schooling in Canada. An independent-samples t-test was also conducted to compare enculturation and acculturation in participants attending school in a country beside Canada or not. The independent samples t-test showed that there was a significant difference in participants' acculturation scores for those who attended school outside of Canada (M=40.47, SD=7.36) and those who did not attend school outside of

Canada (M=45.94, SD=5.84); $t(175)$=-5.43, p=.016, with higher scores for the participants who received all their schooling in Canada. There was no significant difference in terms of enculturation between participants who attended school outside of Canada (M=51.67, SD=9.62) and those who did not attended school outside of Canada (M=47.83, SD=9.83); $t(174)$= 2.62, p=.89.

Multigenerational home environment and cultural linguistic variables. An independent-samples t-test was conducted to look at the differences for acculturation and enculturation in participants living in a multigenerational home environment or not. There was no significant difference in enculturation for participants residing in a multigenerational home (M=48.39, SD= 9.98) and participants who did not residing in a multigenerational home (M=50.24, SD=9.35); $t(55)$=-.59, p=.83. Furthermore, there was no significant difference in acculturation for participants residing in a multigenerational home environment (M=42.57, SD=7.34) and participants not residing in a multigenerational home environment (M=44.92, SD=5.87); $t(55)$=-1.06, p=.18. In addition, there were no significant differences in whether participants resided in a multigenerational home or not and their total English vocabulary scores, self-reported English skills, and self-reported L1 skills (See Table 5).

Total acculturation score and schooling in Canada. We looked at whether attending school in a country besides Canada had an effect on participants' acculturation. The one-way ANOVA showed a statistically significant difference between participants' attending schools in any country besides Canada and their acculturation scores ($F(1,175)$= 29.517, p<.001).

Total vocabulary score and schooling in Canada. There was not a statistically significant difference between participants' total vocabulary scores based on attending school outside of Canada or only in Canada, ($F(1,127)$=3.850, p=.052) (See Table 6).

Acculturation, Enculturation and English proficiency. To explore significant predictors of acculturation, enculturation and participants' English proficiency, a regression analyses was conducted. Enculturation and acculturation were entered as independent variables in the linear regression analysis. The linear regression model produced an $_{adj}R^2 = .04$ with acculturation as a significant predictor of English vocabulary, $\beta=.182$, $F(2, 125)= 2.26$, $p= .044$. However, enculturation was not a significant predictor of English vocabulary (See Table 7).

Language dominance and cultural linguistic variables. To examine the difference between enculturation, acculturation, multigenerational home environment and English vocabulary score, a one-way ANOVA was conducted to compare these variables on participants' language dominance. Three groups were created based on scores on the Bilingual Dominance Scale, L1 dominance, English dominance, and balanced bilinguals. The ANOVA revealed a statistically significant difference in language dominancy based on participants' enculturation, F (2, 145)=14.12, $p<.001$, partial $\eta^2= .16$, and participants' acculturation, F (2, 146)=17.83, $p<.001$, partial $\eta^2=. 20$ (See Table 10). *Post hoc* Bonferroni comparisons displayed that the mean value for enculturation was significantly different between L1 dominant and balanced bilinguals, $p=.038$, 95% C.I.= [.23, 11.43], and between L1 dominant and L2 (English) dominant, $p=<.001$, 95% C.I.= [.4.88, 13.06]. There was no statistically significant difference in enculturation scores between balanced bilinguals and L2 dominant individuals. For acculturation, Bonferroni showed that there was a significant difference between L1 dominant and L2 dominant speakers, $p<.001$, 95% C.I.= [-6.9, 1.51], as well as L2 dominant speakers and balanced bilinguals, $p=.009$, 95% C.I.= [-7.76, -.86]. However, L1 dominant and balanced bilinguals did not differ significantly on acculturation scores. Other language dominance comparisons between multigenerational home environment and participants' English vocabulary skills were not significant (See Table 12).

Language skills and language dominance. Only 103 participants completed the Verbal Fluency measure on Zoom, and only 36 participants' sessions were translated by the research assistants due to the diverse languages being recorded. Comparisons were made across participants based on language dominance and participants' L1 and English verbal fluency skills. Differences were found between groups of participants on total English animal words ($F(2,33)$= 4.09, p= .026, partial η2= .20), total L1 animal words (F (2,33)= 6.59, p=.004, partial η2= .29), and total L1 food words (F (2, 33)= 4.65, p=.017, partial η2= .22) for the naming task. Moreover, participants who were L1 dominant named fewer words than L2 dominant participants in the English animal naming task, M=12.93, SD=3.49 and M=15.80, SD=3.03. In addition, participants who were L1 dominant named more words than the L2 dominant participants in the L1 animal naming task, M=13.38, SD=5.60 and M=7.67, SD=3.83. Participants who were L1 dominant also named more words that the L2 dominant participants, M=13.63, SD=3.30 and M=7.67, SD=3.83, respectively (See Table 13).

Discussion

The present study examined factors related to participants' self-reported English proficiency and L1 proficiency by looking at their age of arrival to Canada and the relationship between the writing, speaking, reading, and understanding skills of each language. We examined the relationship between acculturation and enculturation, as well as the effects on participants' L1 and English skills. Additionally, we examined whether living in a multigenerational home environment would help preserve the participants' L1 skills. We also examined differences in participants who did or did not attend school in another country besides Canada in relation to their L1 and English skills along with participants' levels of enculturation and acculturation. The findings of this study may help inform the area of research in culture and language, specifically

on how various factors such as acculturation and enculturation may affect individuals' language

proficiencies. Overall, the results obtained from the present study suggests that culture and

language are intrinsically intertwined with each other, and for Canadian immigrants, L1 and L2

(English) skills are related to enculturation and acculturation, suggesting that people do not have

to choose between language and cultures. Finally, we examined the role of language dominance

in relation to acculturation, enculturation, and scores on the vocabulary measures.

Language skills and acculturation.

The present study confirmed that participants' English skills were all correlated with each

other. For instance, English speaking, writing, listening, and understanding skills were all

positively correlated with each other. In addition, participants' L1 speaking, writing, listening

and understanding skills were correlated with each other. Such findings suggests that if

participants have high English-speaking skills, then they would also have high English listening,

writing and understanding skills as well. As expected, if individuals have high L1 speaking

skills, then they would also have high L1 listening, writing, and understanding skills. For the

above results, it is important to note that the L1 and L2 ratings are based in self-report and most

of oral language skills were at or near ceiling. Others' ratings of the participants oral language

proficiency might not be the same.

Correlational analyses revealed that there was a negative relationship between

individuals' enculturation and their English speaking, listening, and understanding skills,

indicating that higher enculturation is associated with a decrease in their English listening,

speaking, and understanding proficiency. Interestingly, there was no relationship between

enculturation and participants' English writing skills. In addition, higher enculturation is

associated with higher L1 speaking, listening, writing, and understanding skills, suggesting that

greater affiliation with one's heritage culture and norms, individuals would also have higher first language proficiency. This finding supports previous literature showing that successfully acquiring values and norms of one's native culture also leads to competence in that language (Grusec & Hastings, 2007). Conversely, if participants had higher acculturation, their English speaking, listening, writing, and understanding skills were also higher. Having higher acculturation scores indicated lower L1 speaking and writing skills. However, there was no relationship between acculturation and participants' L1 listening and understanding skills.

This study also examined whether enculturation and acculturation would be related to participants' English vocabulary on subjective measures. However, we found that only acculturation predicted participants' English vocabulary scores. Enculturation did not predict individuals' English vocabulary scores. Based on the three groups we examined, we conclude that participants who were born in Canada had the highest self-reported English speaking, writing, and listening skills as compared to the other groups. This finding suggests that those who arrived in Canada at younger ages have better self-perceived English proficiency than those who arrived later to Canada. In addition, participants who were born in Canada reported lower L1 speaking and writing skills as compared to those who arrived in Canada between the ages 11-20. The participants who arrived in Canada from ages 1-10 years also reported lower L1 speaking and writing skills than those who arrived in Canada between the ages of 11-20 years. Additionally, those who were born in Canada had higher acculturation as compared to the other arrival groups. Intriguingly, participants who were born in Canada scored lower in their English vocabulary as compared to those who arrived in Canada between the ages of 1-10. However, those who arrived in Canada between the ages of 1-10 scored higher in English vocabulary as compared to their 11-20 years of age counterparts.

The results from this study revealed that L1 dominant participants had higher enculturation scores than balanced bilinguals and L2 (English) dominant participants. In addition, L2 dominant speakers reported higher acculturation scores than L1 dominant and balanced bilingual speakers. This result suggests that individuals who have better L1 skills are more enculturated to their heritage culture and are less acculturated to the Canadian culture. In addition, those who have better English skills are more acculturated to the Canadian society and are less enculturated with their native culture. In terms of enculturation and balanced bilinguals, there are no significant differences between being a balanced bilingual or a L2 dominant speaker. Also, balanced bilinguals did not differ with L1 dominant speakers in terms of acculturation either. Finally, L1 and L2 naming scores were consistent with scores on the bilingual dominance scale.

The role of living in a multigenerational home.

The present study found that residing in a multigenerational home environment did not have an effect on individuals' enculturation nor acculturation. We also did not find any significant differences between living in a multigenerational home environment or not and participants' self-reported English proficiency. Although previous literature suggests that grandparents and relatives may continue the tradition of engaging in inter-generational communication (Xie & Xia, 2011), self-ratings of the L1 speaking, writing, listening, and understanding skills were not related to the multigenerational home environment factor. To our knowledge, there are a very limited number of studies regarding multigenerational home environment on individuals' L1 preservation. Therefore, we were hoping to look at whether grandparents or relatives living in the same household as the participants would help them maintain their first language and culture. A surprising finding of this study was that there was no

relationship between living in a multigenerational home environment and participants' L1 proficiency. It could be argued that relatives residing in the same households as the participants would help preserve their L1 skills as immigrant family members, especially that relatives of the youth and adolescents would bring a lot of linguistic and cultural knowledge to the family (Guo, 2012). However, the correlation analysis did not reveal any significant effects. In the current study, we did not look at individualistic and collectivist cultures separately in conducting our analysis, perhaps dividing the participants and their family structure into individualistic and collectivist cultures would give us a different understanding of the role that family dynamics play in terms of L1 maintenance. According to Xie and Xia (2011), inter-generational communication with grandparents plays an essential part in the development of Chinese immigrant children's first language skills. Since China is considered as a collectivist society, perhaps Confucius virtues act as a prominent factor for this culture, and perhaps collectivist cultures may value the interconnectedness between the extended family's traditions as a whole more than individualistic cultures. Additionally, living in a multigenerational home might have more direct and immediate effects on children than on young adults. Further studies may examine whether multigenerational home environment would have any differences in L1 maintenance across different cultured groups such as between collectivist cultures and individualistic cultures.

Schooling in Canada.

There was a significant difference in participants' English proficiency for participants who did and did not attend school in a country besides Canada. Overall, these results showed that participants' English listening and understanding skills were higher if they did not attend school in another country other than Canada. However, results did not indicate a significant difference between participants' English speaking as well as writing skills and whether they attended school

in a country besides Canada. This finding is interesting as speaking and writing are important

skills to acquire and utilize especially for university students. Since the participants of the current

study were university students in their undergraduate degree, this finding is very intriguing. This

suggests that attending school in a country besides Canada or not attending school in a country

besides Canada does not have an effect on individuals' English speaking and writing skills.

Furthermore, we found that participants' self-ratings of their L1 writing skills were higher if they

attended schools in a country outside of Canada. However, we did not find any significant

differences between participants attending school outside of Canada and their self-ratings of L1

speaking, listening and understanding skills. This may suggest that immigrant parents support

their children's first language understanding by communicating with them using the first

language (Shneidman & Goldin-Meadow, 2012). The reason why participants' L1 speaking,

listening and understanding skills are not affected by schooling outside of Canada may be due to

the fact that their parents are actively engaging in conversations with them in their L1, so that

they understand their first language. In previous studies, some immigrant parents reported that

they would converse in their first language with their child and the child would respond back in

the L2 (English) (Blees & Thijie, 2016). This phenomenon is known as receptive

multilingualism and suggests that some people may only understand a language without being

able to speak it fluently.

    We found that attending school in a country besides Canada also had an effect on

participants' acculturation. Those who attended school in another country besides Canada had a

lower acculturation score as compared to those who did not attend school in any country besides

Canada. Another important finding of the present study was that we did not find a statistically

significant difference between participants' English vocabulary scores and whether or not they

attended schools in another country besides Canada. This finding suggests that individuals'
English vocabulary skills do not depend on schooling in Canada, as many of our participants
may completed an English proficiency test in order to study at the Canadian universities or
graduated from a Canadian high school. One of the large components of English proficiency
tests is writing. For instance, the IELTS and TOEFL tests are the most commonly accepted
English-language tests in the world for universities and colleges. Perhaps the inflated self-reports
regarding the English proficiencies may be due to having fulfilled English language university
entrance requirements. Both of these tests have a written component where individuals would
practice and memorize English vocabulary to succeed. Additionally, high school students in
Ontario must pass a written English proficiency test.

Implications and future directions.

Through the present study, we aimed to examine factors that may contribute to L1 loss
and L1 maintenance in youth and adolescents with immigrant backgrounds. We looked at
acculturation, enculturation, home environment, as well as education within and outside Canada,
along with the participants' self-rated language proficiencies in their L1 and L2 (English). The
findings for this study support the previous literature that suggests acculturation is an important
socialization process that links to second language acquisition (e.g., Schumann, 2010; Culhane,
2004). The findings of this study highlight the importance of acculturation and first language
attrition, implying that higher levels of acculturation associate with lower L1 proficiencies.
However, acculturation does have benefits on individuals' English proficiency while
enculturation was associated with higher L1 proficiency. While it is important to acquire the
societal language and adopt the values and customs of the overarching host culture, it is also
crucial to maintain one's first language and culture (Petronela, 2016). These findings

demonstrate the importance of balancing the two cultures for heritage preservation and adjustment to the host culture. Future research may examine how to further preserve or develop L1 skills for immigrants, especially for those who arrived in Canada at a young age or were born in Canada. The results of the present study may highlight on educational policy, where it may help inform practitioners about the importance of language retention for students with immigrant backgrounds. For instance, the educational sector may be encouraged to implement more language classes for students, focusing on diverse languages. Universities could open more courses regarding the history or the languages of various cultures, facilitating the opportunities for students to regain their cultural identification as well as develop better communication skills in their L1s in the process. Future studies could also look at potential ways to regain L1 if that language was already lost. It would be pertinent to look at the possibility and ways to re-learn the L1. The present study could also be extended to looking at how to successfully acquire a second language while preserving one's first language.

As mentioned previously, children are more suspectable to acculturation than adults as they are less exposed to their heritage culture as compared to their adult counterparts. Heine and colleagues (2011) discovered that there is a sensitive period for acculturation. They found that younger children adjusted faster to the Canadian culture, and that they learned English faster as compared to the older population. Knowing this, future directions may examine first language preservation in children and youth as they are already successfully acquiring an L2, English. It would also be valuable to look at how to incorporate and balance two cultures while preserving both languages. There are various benefits to being bilingual and multiple studies have demonstrated that bilingual individuals consistently outperform their monolingual counterparts

on tasks consisting of executive control (Bialystok, 2011). With this in mind, looking at second language acquisition while maintaining one's first language is essential.

Limitations.

Since the present study is largely exploratory, it raises additional questions regarding the role of variables related to L1 loss and maintenance. As mentioned previously, there are no standardized tests for measuring language loss, thus, this study only measured individuals' self-perceived language proficiency and loss. Longitudinal research and research with younger participants could allow us to measure the loss of skills during the school years. One other notable limitation for this study was that we did not look at how motivation would affect participants' language proficiencies. Past literature has suggested that motivation in immigrants is a key factor in driving second language acquisition (Kim, 2007). While acculturation is a factor in regards with individuals' language skills, motivation for integration to the new host culture and motivation in language retention are also important variables to examine. Unfortunately, we did not have any motivation questionnaire for the current study, so that component was not included. Another possible limitation was that the present study did not examine participants' school and community environment. Perhaps some participants attended international schools where English is the dominant language being utilized or perhaps some participants attended schools in the French district. Additionally, some schools might have a majority minority culture and L1. The types of communities in which participants resided in could potentially be another factor to examine. Also, the study did not look at the details of family dynamics between the participants and their family members. The lack of consideration for the amount of L1 interaction in multi-generational households and emotional connection between extended family members is another limitation of the study. Since participants

completed the questionnaires at their own time, they are not being observed or monitored while completing the measures. The questionnaire on Qualtrics takes approximately 45 minutes to complete, and since the participants are not being observed, they may get distracted and lose focus. Also, there are various disadvantages to online surveys such as biased data, low response rate and participants being less engaged in responding to the survey since the average time to complete the questionnaires is around 45 minutes.

Conclusion

In conclusion, the current study examined how acculturation, enculturation, and multigenerational home environments would affect the language skills of youth and adolescents from immigrant backgrounds. It also assessed whether attending school in a country besides Canada would have an impact on their L1 and English skills. This study was accomplished by using measures on Qualtrics survey as well as coding the sessions on Zoom for participants' L1 and English naming task. Although the multigenerational home environment factor was not related to participants' L1 maintenance, further exploration could possibly examine motivation to account for participants' L1 preservation along with the home environment to explore the potential relationship. Moreover, the key findings of this study highlighted that higher English vocabulary knowledge was associated with acculturation, while enculturation was related to higher L1 retention. The current findings add to the literature and research regarding inter-relations among acculturation, enculturation and immigrants' language skills. Some of our findings were consistent with the previous literature while some are not. The current study emphasized the intertwined nature of culture and language, as both are intrinsically tied and affected by each other. This study also provided insights for future directions to aid in retaining L1 skills while successfully acquiring English for individuals with immigrant backgrounds.

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Appendix A

Table 1: Descriptive statistics

Variable	Mean	SD
Age	19.73	3.15
English Speaking Skills	8.82	1.59
English Writing Skills	8.49	2.05
English Listening Skills	9.25	1.26
English Understanding Skills	9.27	1.16
L1 Speaking Skills	8.42	1.95
L1 Writing Skills	6.21	3.35
L1 Listening Skills	9.27	1.37
L1 Understanding Skills	9.08	1.44
Total Relatives at Home	.57	.85
Attending School Outside of Canada	1.47	.50
Vocabulary Score Total	67.09	15.78
Acculturation Total	43.03	7.21
Enculturation Total	49.89	9.88

Table 2: *Correlational matrix for socio-cultural, multigenerational home environment, and language proficiency measures*

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. English Speaking Skills												
2. English Writing. Skills	.805**											
3. English Listening Skills	.764**	.593**										
4. English Understanding. Skills	.683**	.651**	.853**									
5. L1 Speaking Skills	.027	.023.	-.103	-.116								
6. L1 Writing Skills	-.166*	-.114	-.220**	-.207**	.635**							
7. L1 Listening Skills	-.077	-.030	-.062	-.047	.623**	.465**						
8. L1 Understanding Skills	-.055	-.024	.013	.044	.598**	.485**	.836**					
9. Total Vocabulary Score	.064	.078	.113	.022	-.148	-.147	-.023	-.085				
10. Total Relatives in House	-.099	-.077	-.123	-.051	.144	.102	.121	.143	-.027			
11. Total Enculturation	-.220**	-.094**	-.206**	-.205**	.394**	.505**	.311**	.335**	-.056	.075		
12. Total Acculturation	.452**	.408**	.547**	.500**	-.194**	-.212**	-.119	-.112	.187*	-.042	-.271**	

Table 3: Between subject comparisons for arrival categories and cultural linguistic variables

	Born in Canada	Early Arrival(1-10 years)	Late Arrival (11-20 Years)	F Value and Sig
Self-reported English speaking skills	9.18a (1.60)	9.14a (1.42)	8.37b (1.54)	3.82**
Self-reported English writing skills	8.71a (2.56)	9.03a (1.44)	8.02b (1.81)	2.52*
Self-reported English listening skills	9.71a (.74)	9.31b (1.53)	8.84b (1.34)	6.02
Self-reported English understanding skills	9.69a (.68)	9.43a (1.27)	8.95b (1.13)	6.03
Self-reported L1 Speaking skills	8.18a (2.02)	7.91a (2.01)	9.05b (1.51)	4.13**
Self-reported L1 writing skills	6.06a (3.51)	4.57a (3.55)	7.86b (2.26)	10.64
Self-reported L1 listening skills	9.10a (1.43)	9.26b (1.14)	9.44a (1.36)	.74
Self-reported L1 understanding skills	9.00a (1.55)	9.03b (1.31)	9.37a (1.27)	.95
Enculturation	47.76a (11.27)	48.49b (9.53)	51.81a (7.76)	2.18
Acculturation	46.59a (5.25)	43.57b (7.04)	40.16a (7.10)	11.45
English vocabulary	62.41a (15.22)	74.34b (12.98)	65.88a (16.67)	6.46

Table 4. Self-reported language proficiency in attending school outside of Canada and only in Canada groups: Means and Standard Deviation using a paired *t*-test.

	Schooling Outside of Canada		Schooling in Canada only		
	M	SD	M	SD	*t*-test
Self- reported English Speaking	8.57	1.49	9.10	1.66	-2.21
Self-reported English Writing	8.21	1.72	8.81	2.33	-1.95
Self-reported English Listening	8.95	1.38	9.59	1.02	-3.49**
Self-reported English Understanding	9.00	1.28	9.58	.93	.53**
Self-reported L1 Speaking skills	8.70	1.81	8.11	2.06	2.04
Self-reported L1 writing skills	6.77	3.12	5.59	3.50	2.36*
Self-reported L1 listening skills	9.33	1.43	9.20	1.30	.61
Self-reported L1 understanding skills	9.14	1.49	9.02	1.40	.53
Enculturation	51.67	9.62	47.83	9.83	2.62
Acculturation	40.47	7.35	45.94	5.84	-5.43*

**p<.01
*p<.05

Table 5. Enculturation, Acculturation and self-reported language proficiency in Multigenerational-home Environment: Means and Standard Deviation using a paired t-test.

	Reside in a Multigenerational Home (yes)		Reside in a Multigenerational Home (no)		
	M	SD	M	SD	t-test
Enculturation	48.39	9.98	50.24	9.35	-.59
Acculturation	42.57	7.34	44.92	5.87	-1.06
English Vocabulary	68.79	15.72	72.00	20.87	-.49
Self-reported English Speaking	8.45	1.78	8.92	2.06	-.80
Self-reported English Writing	7.81	2.63	8.31	2.69	-.59
Self-reported English Listening	9.07	1.48	9.31	1.18	-.53
Self-reported English Understanding	9.20	1.42	9.15	1.46	.11
Self-reported L1 Speaking					
Self-reported L1 writing	8.25	1.69	8.85	2.12	-1.06
Self-reported L1 listening	5.41	3.61	6.38	3.62	-.86
Self-reported L1 understanding	9.18	1.50	9.54	.97	-.81
	9.05	1.28	9.38	1.19	-.85

**p<.01
*p<.05

Table 6: Group differences based on schooling in Canada

Variable	Schooling in Any Country Besides Canada Yes	Schooling in Any Country Besides Canada No	F Value and Sig
Acculturation	40.47 (7.36)	45.94 (5.84)	29.52**
Total Vocabulary	69.77 (16.06)	64.38 (15.14)	3.85

Table 7: Relationships between Acculturation and Enculturation and English vocabulary (total

$adjR^2 = .035$)

Variable	Std. error	β	t-value	p-value
Enculturation	.144	-.020	-.221	.825
Acculturation	.205	.182	.182	.044

Table 8: Descriptive statistics for language dominancy and enculturation

Enculturation

	N	Mean	SD	Std Error	95% Confidence Interval	
					Lower Bound	Upper Bound
L1 Dominant	42	55.31	8.94	1.38	52.52	58.10
Balanced Bilingual	23	49.48	8.07	1.68	45.99	52.97
L2 Dominant	83	46.34	9.12	1.00	44.35	48.33
Total	148	49.37	9.68	.80	47.80	50.94

Table 9: Descriptive statistics for language dominancy and acculturation

Acculturation

	N	Mean	SD	Std Error	95% Confidence Interval Lower Bound	Upper Bound
L1 Dominant	42	39.71	7.36	1.14	37.42	42.01
Balanced Bilingual	23	42.00	6.03	1.26	39.39	44.60
L2 Dominant	84	46.31	5.29	.58	45.16	47.46
Total	149	43.79	6.70	.55	42.70	44.87

Table 10: Descriptive statistics for language dominancy and multigenerational home environment

Multigenerational home

	N	Mean	SD	Std Error	95% Confidence Interval Lower Bound	Upper Bound
L1 Dominant	41	.56	.92	.14	.27	.85
Balanced Bilingual	21	.90	1.00	.22	.45	1.36
L2 Dominant	80	.56	.79	.09	.39	.74
Total	142	.61	.87	.07	.37	.76

Table 11: Descriptive statistics for language dominancy and English vocabulary

English Vocabulary

	N	Mean	SD	Std Error	95% Confidence Interval Lower Bound	Upper Bound
L1 Dominant	29	65.31	18.19	3.38	58.39	72.23
Balanced Bilingual	17	69.18	20.65	5.01	58.56	79.79
L2 Dominant	65	68.68	14.42	1.79	65.10	72.25
Total	111	67.87	16.42	1.56	64.79	70.96

Table 12: Between subject comparisons for language dominancy and enculturation, acculturation,

multigenerational home environment and English vocabulary

	L1 Dominant	Balanced Bilingual	L2 Dominant	F Value and Sig
Enculturation	55.31a (8.94)	49.48b (8.07)	46.34b (9.12)	14.12**
Acculturation	39.71a (7.36)	42.00a (6.03)	46.31b (5.29)	17.83**
Multi-generational Home Environment	.56a (.92)	.90a (1.00)	.56a (.79)	1.41
English Vocabulary	65.31a (18.19)	69.18a (20.65)	68.68a (14.42)	.48

Table 13: Descriptive statistics for language dominancy and VFT (English animal words)

English animal words

	N	Mean	SD	Std Error	95% Confidence Interval	
					Lower Bound	Upper Bound
L1 Dominant	16	12.94	3.49	.87	11.08	14.80
Balanced Bilingual	5	12.40	1.52	.68	10.52	14.28
L2 Dominant	15	15.80	3.03	.78	14.12	17.48
Total	36	14.06	3.38	.56	12.91	15.20

Table 14: Descriptive statistics for language dominancy and VFT (English food words)

English food words

	N	Mean	SD	Std Error	95% Confidence Interval Lower Bound	Upper Bound
L1 Dominant	16	12.25	3.00	.75	10.65	13.85
Balanced Bilingual	5	12.80	.84	.37	11.76	13.84
L2 Dominant	15	12.27	4.51	1.16	9.77	14.77
Total	36	12.33	3.48	.58	11.16	13.51

Table 15: Descriptive statistics for language dominancy and VFT (L1 animal words)

L1 animal words

| | N | Mean | SD | Std Error | 95% Confidence Interval | |
					Lower Bound	Upper Bound
L1 Dominant	16	13.38	5.59	1.40	10.39	16.36
Balanced Bilingual	5	8.40	1.52	.68	6.52	10.28
L2 Dominant	15	7.67	3.83	1.00	5.55	9.79
Total	36	10.31	5.23	.87	8.54	12.08

Table 16: Descriptive statistics for language dominancy and VFT (L1 food words)

L1 food words

	N	Mean	SD	Std Error	95% Confidence Interval	
					Lower Bound	Upper Bound
L1 Dominant	16	13.63	3.30	.83	11.86	15.39
Balanced Bilingual	5	10.00	2.92	1.30	6.38	13.62
L2 Dominant	15	9.80	4.25	1.10	7.45	12.15
Total	36	11.53	4.06	.68	10.15	12.90

Table 17: Between subject comparisons for language dominancy and VFT

	L1 Dominant	Balanced Bilingual	L2 Dominant	F Value and Sig
English Animal Words	12.94a (3.49)	12.40a (1.51)	15.80b (3.03)	4.10*
English Food Words	12.25a (3.00)	12.80a (.84)	12.27a (4.51)	.05
L1 Animal Words	13.38a (5.60)	8.40a (1.52)	7.67b (3.83)	6.59**
L1 Food Words	13.63a (3.30)	10.00a (2.92)	9.80b (4.25)	4.65*

Appendix B

Family Language Questionnaire

In order to be able to better understand the factors that influence adolescents and young adults' ability to learn in a second language, we would like to obtain some information about language knowledge and language use in the home. We would greatly appreciate it if you would complete the following questions concerning your family and yourself who is in the study.

Today's date: _____

Please answer these questions in the study.

3. What age did you learn to speak your native language?

        First words _____
        Sentences _____

4.a) Were you born in Canada?   Yes   No

b) If you were not born in Canada, how old were you when you moved to Canada? _____

c) In what grade did you start school in Canada? _____

5. What language or languages are spoken at home?

Language 1: _____

Language 2: _____

6. What is your first language? _____

7. What is your second language? _____

 Other languages: _____

8. What is your best language? _____

9. These questions will help us understand the languages that are spoken in your home.
   a) Do you have any grandparents residing in your household? Yes   No

   b) Do you have any aunts or uncles living in your household? Yes   No

   c) Do you have any cousins living in your household?   Yes   No

   d) Do you have any other relatives residing in your household?   Yes   No
   If yes who _____

9. e) Are you currently living at home? Yes   No

When living at home, how often do you speak to the members of your household in your native language?
(Leave blank if certain boxes do not apply to you. I.e., if you do not have cousins residing in your household, leave the Column blank).

	100%Native Lang, 0% English	75%Native Lang, 25% English	50%Native Lang, 50% English	25%Native Lang, 75% English	0%Native Lang, 100% English
Mother					
Father					
Brothers & Sisters					
Grandparents 1					
Grandparents 2					
Aunts & Uncles 1					
Aunts & Uncles 2					
Cousins 1					
Cousins 2					
Other 1 (specify)					
Other 2 (specify)					

10. How often do you watch TV or videos in **English** and in your **native language**?

	More than 2 hours per day	1-2 hours per day	2-5 hours per week	Less than 2 hours per week	Never
English					
Main home language					

11. How often do you read at home in **English** and in your **native language**?

	More than 2 hours per day	1-2 hours per day	2-5 hours per week	Less than 2 hours per week	Never
English					
Main home language					

12. For each of the following **English** language skills, please rate how well you feel that you can currently perform the skill. (Circle one number per skill)

		ability	
		none very fluent	
Understanding		1 2 3 4 5 6 7 8 9 10	
Speaking		1 2 3 4 5 6 7 8 9 10	
Reading		1 2 3 4 5 6 7 8 9 10	

Writing			1	2	3	4	5	6	7	8	9	10

13. For each of the following **Native Language** skills, please rate how well you feel that you can currently perform the skill. (Circle one number per skill)

			ability									
			none								very fluent	
Understanding			1	2	3	4	5	6	7	8	9	10
Speaking			1	2	3	4	5	6	7	8	9	10
Reading			1	2	3	4	5	6	7	8	9	10
Writing			1	2	3	4	5	6	7	8	9	10

14. Please place an X beside the highest level of education that you have attained.

_____   Elementary school
_____   Some high school studies
_____   Completed high school
_____   Some college or university studies
_____   Completed college diploma
_____   Completed undergraduate degree
_____   Some postgraduate studies
_____   Completed graduate or professional degree

For Parent 1 please answer the following questions. Please select Parent 1 as the Parent with whom you live

most often. If both are equal, respond to that section when describing Parent 2.

Is Parent 1 your: Mother   Father   Other (specify): _____

15. For each of the following **English** language skills, please rate how well Parent 1 residing in your household can currently perform the skill. (circle one number per skill)

			ability									
			none								very fluent	
Understanding			1	2	3	4	5	6	7	8	9	10
Speaking			1	2	3	4	5	6	7	8	9	10
Reading			1	2	3	4	5	6	7	8	9	10
Writing			1	2	3	4	5	6	7	8	9	10

16. For each of the following **Native language** skills, please rate how well Parent 1 residing in your household can currently perform the skill. (circle one number per skill)

		ability									
		none								very fluent	
Understanding		1	2	3	4	5	6	7	8	9	10
Speaking		1	2	3	4	5	6	7	8	9	10
Reading		1	2	3	4	5	6	7	8	9	10
Writing		1	2	3	4	5	6	7	8	9	10

19. Please place an X beside the highest level of education attained by Parent 1:

_____ Elementary school
_____ Some high school studies
_____ Completed high school
_____ Some college or university studies
_____ Completed undergraduate degree
_____ Some postgraduate studies
_____ Completed graduate or professional degree

20.   Parent 1's occupation: _____

If Parent 1 is a new Canadian and was employed before immigrating to Canada, please indicate occupation in your home country _____

For Parent 2 please answer the following questions.

Is Parent 2 your: Mother   Father   Other (specify):

Does Parent 2 reside in the same household as you? Yes No

If no, how often do you reside with Parent 2?

About as often as Parent 1 _____   Less often than Parent 1 _____

17. For each of the following **English** language skills, please rate how well Parent 2 can currently perform the skill. (circle one number per skill)

		ability									
		none								very fluent	
Understanding		1	2	3	4	5	6	7	8	9	10
Speaking		1	2	3	4	5	6	7	8	9	10
Reading		1	2	3	4	5	6	7	8	9	10
Writing		1	2	3	4	5	6	7	8	9	10

18. For each of the following **Native language** skills, please rate how well Parent 2 can currently perform the skill. (circle one number per skill)

		ability									
		none									very fluent
Understanding		1	2	3	4	5	6	7	8	9	10
Speaking		1	2	3	4	5	6	7	8	9	10
Reading		1	2	3	4	5	6	7	8	9	10
Writing		1	2	3	4	5	6	7	8	9	10

19. Please place an X beside the highest level of education attained by Parent 2:

_____ Elementary school
_____ Some high school studies
_____ Completed high school
_____ Some college or university studies
_____ Completed undergraduate degree
_____ Some postgraduate studies
_____ Completed graduate or professional degree

20.   Parent 2's occupation: _____

If Parent 2 is a new Canadian and was employed before immigrating to Canada, please indicate occupation in your home country _____

21. Please place an X beside the highest level of education attained by Parent 2:

_____ Elementary school
_____ Some high school studies
_____ Completed high school
_____ Some college or university studies
_____ Completed undergraduate degree
_____ Some postgraduate studies
_____ Completed graduate or professional degree

Parent 2's occupation: _____

If Adult 2 is a new Canadian and was employed before immigrating to Canada, please indicate occupation in your home country _____

Appendix C

Acculturation Rating Scale-II
Language Use and Preference

(Circle a number between 1-5 next to each item that best applies.)
1 --- Not at all
2 --- Very little or not very often
3 --- Sometimes
4 --- Much or very often
5 --- Almost always

What is your native language? _____

1	I speak my native language	1	2	3	4	5
2	I speak English	1	2	3	4	5
3	I enjoy speaking my native language.	1	2	3	4	5
4	I enjoy listening to music in my native language	1	2	3	4	5
5	I socialize with Anglo-Canadians	1	2	3	4	5
6	I enjoy English language movies	1	2	3	4	5
7	I enjoy watching TV in my native language	1	2	3	4	5
8	I associate with people from my culture of origin	1	2	3	4	5
9	I enjoy listening to English language/music	1	2	3	4	5
10	I enjoy English language TV	1	2	3	4	5
11	My family cooks food from my culture of origin	1	2	3	4	5
12	My friends are Anglo-Canadians	1	2	3	4	5
13	I enjoy movies from my culture of origin	1	2	3	4	5
14	I enjoy reading books and newspapers in my native language	1	2	3	4	5
15	I enjoy reading books and newspapers in English	1	2	3	4	5
16	I think in English.	1	2	3	4	5
17	My father thinks of himself as belonging to his culture of origin	1	2	3	4	5
18	My mother thinks of herself as belonging to her culture of origin	1	2	3	4	5
19	My friends are from my culture of origin	1	2	3	4	5
20	I like to think of myself as an Anglo-Canadian	1	2	3	4	5
21	I like to think of myself as a Canadian and from my culture of origin	1	2	3	4	5
22	I like to think of myself as a Canadian	1	2	3	4	5
23	I like to think of myself as a from my culture of origin	1	2	3	4	5
24	I write letters or essays in my native language	1	2	3	4	5
25	I think in my native language	1	2	3	4	5
26	I write letters or essays in English	1	2	3	4	5

Appendix D

Bilingual Dominance Scale A:
Dunn and Fox Tree (2009)

At what age did you first learn:
1. Native language? _____
2. English? _____

At what age did you first feel comfortable speaking this language (if you still do not feel comfortable, write "not yet"):
3. Native language? _____
4. English? _____

Which language do you use most when you are at home (check one)?:
5. Native language _____
   English _____
   Both _____

When doing math in your head (such as multiplying 6 x 5), which language do you calculate the numbers in?:
6. Native language _____
   English _____
   Both _____

When speaking in your native language, do people ever tell you that you have an accent?
7. YES / NO

When speaking in English, do people ever tell you that you have an accent?
8. YES / NO

If you had to choose one language to use for the rest of your life, which language would it be?
9. Native language _____
   English _____

How many years of schooling did you have in:
10. Native language _____
11. English _____

When having a conversation in your native language, do you sometimes have trouble coming up with the right words to say?
12. YES / NO

When having a conversation in English, do you sometimes have trouble coming up with the right words to say?
13. YES / NO

What country do you currently live in?
14. _____

Appendix E

Vocabulary Size Test: Version A

1. see: They <saw it>.
a closed it tightly
b waited for it
c looked at it
d started it up

2. time: They have a lot of <time>.
a money
b food
c hours
d friends

3. period: It was a difficult <period>.
a question
b time
c thing to do
d book

4. figure: Is this the right <figure>?
a answer
b place
c time
d number

5. poor: We <are poor>.
a have no money
b feel happy
c are very interested
d do not like to work hard

6. microphone: Please use the <microphone>.
a machine for making food hot
b machine that makes sounds louder
c machine that makes things look bigger
d small telephone that can be carried around

7. nil: His mark for that question was <nil>.
a very bad
b nothing
c very good
d in the middle

8. pub: They went to the <pub>.
a place where people drink and talk
b place that looks after money
c large building with many shops
d building for swimming

9. circle: Make a <circle>.
a rough picture
b space with nothing in it

c round shape
d large hole

10. dig: Our dog often <digs>.
a solves problems with things
b creates a hole in the ground
c wants to sleep
d enters the water

11. soldier: He is a <soldier>.
a person in a business
b person who studies
c person who uses metal
d person in the army

12restore: It has been <restored>.
a said again
b given to a different person
c made like new again
d given a lower price

13. pro: He's <a pro>.
a someone who is employed to find out important secrets
b a stupid person
c someone who writes for a newspaper
d someone who is paid for playing sport

14. compound: They made a new <compound>.
a agreement
b thing made of two or more parts
c group of people forming a business
d guess based on past experience

15. deficit: The company <had a large deficit>.
a spent a lot more money than it earned
b went down a lot in value
c had a plan for its spending that used a lot of money
d had a lot of money stored in the bank

16. strap: He broke the <strap>.
a promise
b top cover
c shallow dish for food
d strip of strong material

17. weep: He <wept>.
a finished his course
b cried
c died
d worried

18. haunt: The house is <haunted>.
a full of decorations
b rented
c empty
d full of ghosts

19. cube: I need one more <cube>.
a sharp thing used for joining things
b solid square block
c tall cup with no saucer
d piece of stiff paper folded in half

20. butler: They have a <butler>.
a man servant
b machine for cutting up trees
c private teacher
d cool dark room under the house

21. nun: We saw a <nun>.
a long thin creature that lives in the earth
b terrible accident
c woman following a strict religious life
d unexplained bright light in the sky

22. olive: We bought <olives>.
a oily fruit
b scented flowers
c men's swimming clothes
d tools for digging

23. shudder: The boy <shuddered>.
a spoke with a low voice
b almost fell
c shook
d.called out loudly

24. threshold: They raised the <threshold>.
a flag
b point or line where something changes
c roof inside a building
d cost of borrowing money

25. demography: This book is about <demography>.
a the study of patterns of land use
b the study of the use of pictures to show facts about numbers
c the study of the movement of water
d the study of population

26. malign: His <malign> influence is still felt.
a good
b evil
c very important
d secret

27. strangle: He <strangled her>.
a killed her by pressing her throat
b gave her all the things she wanted
c took her away by force
d admired her greatly

28. dinosaur: The children were pretending to be <dinosaurs>.
a robbers who work at sea
b very small creatures with human form but with wings
c large creatures with wings that breathe fire
d animals that lived an extremely long time ago

29. jug: He was holding <a jug>.
a a container for pouring liquids
b an informal discussion
c a soft cap
d a weapon that blows up

30. crab: Do you like <crabs>?
a very thin small cakes
b tight, hard collars
c sea creatures that always walk to one side
d large black insects that sing at night

31. quilt: They made a <quilt>.
a statement about who should get their property when they die
b firm agreement
c thick warm cover for a bed
d feather pen

32. tummy: Look at my <tummy>.
a fabric to cover the head
b stomach
c small soft animal
d finger used for gripping

33. eclipse: <There was an eclipse>.
a A strong wind blew all day
b I heard something hit the water
c A large number of people were killed
d The sun was hidden by the moon

34. excrete: This was <excreted> recently.
a pushed or sent out
b made clear
c discovered by a science experiment
d put on a list of illegal things

35. ubiquitous: Many unwanted plants <are ubiquitous>.
a are difficult to get rid of

b have long, strong roots
c are found everywhere
d die away in the winter

36. marrow: This is <the marrow>.
a symbol that brings good luck to a team
b soft centre of a bone
c control for guiding a plane
d increase in salary

37. cabaret: We saw the <cabaret>.
a painting covering a whole wall
b song and dance performance
c small crawling creature
d person who is half fish, half woman

38. cavalier: He treated her <in a cavalier manner>.
a without care
b with good manners
c awkwardly
d as a brother would

39. veer: The car <veered>.
a moved shakily
b changed course
c made a very loud noise
d slid without the wheels turning

40. yoghurt: This <yoghurt> is disgusting.
a dark grey mud found at the bottom of rivers
b unhealthy, open sore
c thick, soured milk, often with sugar and flavouring
d large purple fruit with soft flesh

41. octopus: They saw <an octopus>.
a a large bird that hunts at night
b a ship that can go under water
c a machine that flies by means of turning blades
d a sea creature with eight legs

42. monologue: Now he has a <monologue>.
a single piece of glass to hold over his eye to help him to see
b long turn at talking without being interrupted
c position with all the power
d picture made by joining letters together in interesting ways

43. candid: Please <be candid>.
a be careful
b show sympathy
c show fairness to both sides
d say what you really think

44. nozzle: Aim the <nozzle> toward it.
a space that light passes through in a camera
b dry patch of skin
c pipe attachment that forces water

d sharp part of a fork

45. psychosis: He has <a psychosis>.
a an inability to move
b an oddly coloured patch of skin
c a body organ that processes sugar
d a mental illness

46. ruck: He got hurt in the <ruck>.
a region between the stomach and the top of the leg
b noisy street fight
c group of players gathered round the ball in some ball games
d. race across a field of snow

47. rouble: He had a lot of <roubles>.
a very valuable red stones
b distant members of his family
c Russian money
d moral or other difficulties in the mind

48. canonical: These are <canonical examples>.
a examples which break the usual rules
b examples taken from a religious book
c regular and widely accepted examples
d examples discovered very recently

49. puree: This <puree> is bright green.
a fruit or vegetables in liquid form
b dress worn by women in India
c skin of a fruit
d very thin material for evening dresses

50. vial: Put it in a <vial>.
a device which stores electricity
b country residence
c dramatic scene
d small glass bottle

51. counterclaim: They made <a counterclaim>.
a a demand response made by one side in a law case
b a request for a shop to take back things with faults
c an agreement between two companies to exchange work
d a decorative cover for a bed, which is always on top

52. refectory: We met in the <refectory>.
a room for eating
b office where legal papers can be signed
c room for several people to sleep in
d room with glass walls for growing plants

53. trill: He practised the <trill>.
a repeated high musical sound
b type of stringed instrument
c way of throwing the ball
d dance step of turning round very fast on the toes

54. talon: Just look at those <talons>!
a high points of mountains
b sharp hooks on the feet of a hunting bird
c heavy metal coats to protect against weapons
d people who make fools of themselves without realizing it

55. plankton: We saw a lot of <plankton> here.
a poisonous plants that spread very quickly
b very small plants or animals found in water
c trees producing hard wood
d grey soil that often causes land to slip

56. soliloquy: That was an excellent <soliloquy>!
a song for six people
b short clever saying with a deep meaning
c entertainment using lights and music
d speech in the theatre by a character who is alone

57. puma: They saw a <puma>.
a small house made of mud bricks
b tree from hot, dry countries
c large wild cat
d very strong wind that lifts anything in its path

58. augur: It <augured well>.
a promised good things for the future
b. agreed with what was expected
c had a colour that looked good with something else
d rang with a clear, beautiful sound

59. emir: We saw the <emir>.
a bird with two long curved tail feathers
b woman who cares for other people's children in eastern countries
c Middle Eastern chief with power in his own land
d house made from blocks of ice

60. didactic: The story <is very didactic>.
a tries hard to teach something
b is very difficult to believe
c deals with exciting actions
d is written with unclear meaning

61. cranny: Look what we found in the <cranny>!
a sale of unwanted objects
b narrow opening
c space for storing things under the roof of a house
d large wooden box

62. lectern: He stood at the <lectern>.
a desk made to hold a book at a good height for reading
b table or block used for church ceremonies
c place where you buy drinks
d very edge

63. azalea: This <azalea> is very pretty.
a small tree with many flowers growing in groups

b light natural fabric
c long piece of material worn in India
d sea shell shaped like a fan

64. marsupial: It is <a marsupial>.
a an animal with hard feet
b a plant that takes several years to grow
c a plant with flowers that turn to face the sun
d an animal with a pocket for babies

65. bawdy: It was very <bawdy>.
a unpredictable
b innocent
c rushed
d indecent

66. crowbar: He used a <crowbar>.
a heavy iron pole with a curved end
b false name
c sharp tool for making holes in leather
d light metal walking stick

67. spangled: Her dress was <spangled>.
a torn into thin strips
b covered with small bright decorations
c made with lots of folds of fabric
d ruined by touching something very hot

68. aver: She <averred> that it was the truth.
a refused to agree
b declared
c believed
d warned

69. retro: It had <a retro look>.
a a very fashionable look
b the look of a piece of modern art
c the look of something which has been used a lot before
d the look of something from an earlier time

70. rascal: She is such <a rascal> sometimes.
a an unbeliever
b a dedicated student
c a hard worker
d a bad girl

71. tweezers: They used <tweezers>.
a small pieces of metal for holding papers together
b small pieces of string for closing wounds
c a tool with two blades for picking up or holding small objects
d strong tool for cutting plants

72. bidet: They have a <bidet>.
a low basin for washing the body after using the toilet
b large fierce brown dog
c small private swimming pool
d man to help in the house

73. sloop: Whose <sloop> is that?
a warm hat
b light sailing boat
c left over food
d untidy work

74. swingeing: They got <swingeing fines>.
a very large fines
b very small fines
c fines paid in small amounts at a time
d fines that vary depending on income

75. cenotaph: We met at the <cenotaph>.
a large and important church
b public square in the centre of a town
c memorial for people buried somewhere else
d underground train station

76. denouement: I was disappointed with the <denouement>
a ending of a story which solves the mystery
b amount of money paid for a piece of work
c small place to live which is part of a bigger building
d official report of the results of a political meeting

77. bittern: She saw a <bittern>.
a large bottle for storing liquid
b small green grass snake
c false picture caused by hot air
d water bird with long legs and a very loud call

78. reconnoitre: They have gone to <reconnoitre>.
a think again
b make an examination of a new place
c have a good time to mark a happy event
d complain formally

79. magnanimity: We will never forget her <magnanimity>.
a very offensive and unfriendly manners

b courage in times of trouble
c generosity
d completely sincere words

80. effete: He has become <effete>.
a weak and soft
b too fond of strong drink
c unable to leave his bed
d extremely easy to annoy

81. rollick: They were <rollicking>.
a driving very fast
b. staying away from school without being permitted to
c having fun in a noisy and spirited way
d sliding on snow using round boards

82. gobbet: The cat left a <gobbet> behind.
a strip of torn material
b footprint
c piece of solid waste from the body
d lump of food returned from the stomach

83. rigmarole: I hate the <rigmarole>.
a very fast and difficult dance for eight people
b funny character in the theatre
c form which must be completed each year for tax purposes
d long, pointless and complicated set of actions

84. alimony: The article was about <alimony>.
a feelings of bitterness and annoyance, expressed sharply
b money for the care of children, paid regularly after a divorce
c giving praise for excellent ideas
d a metal which breaks easily and is bluish white

85. roughshod: He <rode roughshod>.
a travelled without good preparation
b made lots of mistakes
c did not consider other people's feelings
d did not care about his own comfort

86. copra: They supply <copra>.
a a highly poisonous substance used to kill unwanted plants
b the dried meat from a large nut used to make oil
c an illegal substance which makes people feel good for a short time
d strong rope used on sailing ships

87. bier: She lay on the <bier>.
a folding garden chair
b grass next to a river
c place where boats can be tied up
d board on which a dead body is carried

88. torpid: He was <in a torpid state>.
a undecided
b filled with very strong feelings
c confused and anxious

d slow and sleepy

89. dachshund: She loves her <dachshund>.
a warm fur hat
b thick floor rug with special patterns
c small dog with short legs and a long back
d old musical instrument with twelve strings

90. cadenza: What did you think of the <cadenza>?
a cake topped with cream and fruit
b large box hanging from a wire that carries people up a mountain
c slow formal dance from Italy
d passage in a piece of music that shows the player's great skill

91. obtrude: These thoughts <obtruded themselves>.
a got themselves lost or forgotten
b did not agree with each other
c got mixed up with each other
d pushed themselves forward in the mind

92. panzer: They saw the <panzers> getting nearer.
a players in a marching band
b fighter planes
c large, slow windowless army cars
d policewomen

93. cyborg. She read about a <cyborg>
a an integrated human-machine system
b a musical instrument with forty strings
c a small, newly invented object
d a warm wind in winter

94. zygote: It is <a zygote>.
a an early phase of sexual reproduction
b a lot of bother over nothing
c a small animal found in southern Africa
d a gun used to launch rockets

95. sylvan: The painting had a <sylvan> theme.
a lost love
b wandering
c forest
d casual folk

96. sagacious: She had many ideas that were <sagacious>.
a instinctively clever
b ridiculous and wild
c about abusing people and being abused
d rebellious and dividing

97. spatiotemporal: My theory is <spatiotemporal>.
a focussed on small details
b annoying to people
c objectionably modern
d oriented to time and space

98. casuist: Don't <play the casuist> with me!
a focus only on self-pleasure
b act like a tough guy
c make judgments about my conduct of duty
d be stupid

99. cyberpunk: I like <cyberpunk>.
a medicine that does not use drugs
b one variety of science fiction
c the art and science of eating
d a society ruled by technical experts

100. pussyfoot: Let's not <pussyfoot around>.
a criticise unreasonably
b take care to avoid confrontation
c attack indirectly
d suddenly start