The Impact of a Bilingual School Program on Generational Heritage Language Loss

by

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ABSTRACT

With each passing generation, immigrant families often experience the loss of their heritage language. This has frequently been attributed to influences such as societal pressures and a lack of motivation to learn the language. As a result, heritage language classes are regularly suggested as a means to transmit the heritage language to later generations.

This investigation examined the impact of the Mandarin-English bilingual program administered through the Edmonton Public School Board on the heritage language abilities in Cantonese, Mandarin, or Taishanese for second- and third-generation Chinese-Canadian immigrants. Participants were asked to complete listening, speaking, reading, and writing tasks in their respective heritage language, as well as take part in an interview and questionnaire regarding their current language environments.

Second-generation participants who attended the bilingual program obtained higher scores in reading and writing than their counterparts who did not attend the program. Scores for oral language usage (i.e., listening and speaking) were similar between the two groups. For third-generation participants, those who attended the bilingual program displayed higher scores in all aspects of heritage language use than the third-generation participants who did not attend. In fact, this latter group was largely unable to use the heritage language altogether. These results suggest that the Mandarin-English bilingual program has a positive effect on heritage language maintenance in later generations of Chinese-Canadian immigrants, particularly in regard to literacy. Nevertheless, a decline in heritage language ability across the second- and third-generation was noted, regardless of program attendance. This suggests that while the Mandarin-English bilingual program may slow the rate of heritage language loss for Chinese-Canadians, the attrition of heritage languages continues to occur.

PREFACE

This thesis is an original work by June Cheung. The research project, of which this thesis is a

part, received research ethics approval from the University of Alberta Research Ethics Board.

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INTRODUCTION

Language and cultural identity are closely intertwined, and for immigrant families in a new country, the preservation of a heritage language can be critical for maintaining their ethnic identity. However, economic and social pressures can cause language loss to occur (Templin, Seidl, Wickström, & Feichtinger, 2016), and this is particularly evident for minority languages. Historically, studies that have sought to understand heritage language maintenance and loss for immigrant populations have been guided by the three-generation model, which was proposed by Joshua Fishman in 1966. Fishman (1966) described a scenario in which the first-generation is fluent in the heritage language, the second-generation has limited capability with the heritage language, and the third-generation cannot use the heritage language at all. This model been examined more recently for its validity with a variety of ethnic groups (Alba, Logan, Lutz, & Stults, 2002; Suarez, 2007), and many researchers have chosen to look at the impact of socioeconomic factors, linguistic factors, and personal factors on the applicability of this model (Cho, 2000; Ho, 2011; Zhang, 2010).

Within the field of heritage language studies, much of the research has been conducted in the United States, a place where the "melting pot" philosophy encourages different cultures to become more homogenous (United States, 1995). Therefore, it is of interest to examine Canada and its proclaimed "mosaic" approach to multiculturalism (Statistics Canada, 2013), in order to see how these different worldviews affect language maintenance. For example, the mosaic approach encourages multiple cultures to thrive, resulting in different supports for the preservation of cultural features such as heritage languages. In regard to heritage languages, these supports include immersion programs, bilingual programs, and language option classes for

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minority languages within some public school systems (Canadian Education Association, 1991). Given the fact that immigrants equal approximately 20.6% of the population (Statistics Canada, 2013), this topic is certainly of relevance to Canadian society, and further investigation is warranted.

Factors that affect heritage language maintenance or loss include language input, family dynamics and living arrangements, socioeconomic status and the presence of a vibrant cultural community (Suarez, 2007). Traditionally, studies of heritage language tend to rely on census data (Alba *et al.*, 2002; Ishizawa, 2004), questionnaires (Cho, 2015; Paciotto, 2014; Siordia & Diaz, 2012), or interviews (Ho, 2011; Zhang, 2010) to gather data on heritage language use. These methods often dichotomize the ability to use language into a "yes" or "no" statement, which disregards the nature of fluency with its subtle gradations. As a result, the degree of the respondents' language proficiency may not be clear. In addition, reliance on self-report can be affected by differing personal definitions of fluency. Nevertheless, in recent years, more studies have shifted toward obtaining quantitative measures of heritage language proficiency in later generations (Jia & Paradis, 2015). This thesis aims to contribute to this newer direction by directly measuring receptive and expressive heritage language abilities in second- and third-generation Chinese-Canadian immigrants and comparing the performance of those who did and did not attend a bilingual education program. By so doing, insight may be gained into the transmission of language across generations for immigrant families, as well as deeper understanding of the impact of bilingual education programs on heritage language maintenance.

LITERATURE REVIEW

This brief overview of the relevant existing literature contains four parts. Firstly, the validity of the three-generation model and its applicability to modern day immigrant populations was reviewed. Next, the factors known to affect heritage language maintenance were examined. As various immigrant populations may behave differently in regard to heritage language maintenance and ethnic identity (Alba *et al.*, 2002), the third section focused on Chinese immigrant populations, which is the population of interest in this study. Finally, an examination of heritage language programs was undertaken to provide context for the bilingual education program that was studied in this thesis.

Three-Generation Model

One of the most common causes for language shift is the cultural, political, or economic dominance of one language by another (Templin *et al.*, 2016). For immigrant populations, these factors come into play quickly, affecting the utilization of language. The three-generation model was first introduced by Fishman (1966) as he studied French, Spanish, German, Jewish, Hungarian, and Ukrainian immigrant populations in the United States in the 1960's. A general trend of heritage language loss over three generations was observed; the first-generation immigrates with fluency in the heritage language, but semi-speakers of the heritage language emerge in the second-generation, and by the third-generation, individuals are often unable to use the heritage language altogether. Here, the term "semi-speaker" is used to describe varying amounts of language abilities that fall short of native fluency. This model also agrees with the phases of language shift described by Templin *et al.* (2016). Firstly, there is the establishment of diglossia within a community, in which one language or dialect holds prestige over another to the

extent that the more highly valued language or dialect dominates certain domains such as literature, politics, or education. This social convention encourages those who may have initially only spoken the minority language to acquire the more prestigious language, leading to the second phase of bilingualism. The final phase is the replacement of a minority language with the highly valued language. This occurs when speakers begin to use the prestigious language or dialect almost exclusively, rather than in the specific contexts that existed in the diglossic phase.

Generational status has been found to be an important factor by many researchers. Kuo (1974) indicated that there were generational differences in the way that the heritage language was used, while Rumbaut (2004) found that as the generations progressed, there were sharp differences in spoken language proficiency, with language loss occurring quickly and in a linear fashion. In his studies of heritage languages in Canada, Pendakur (1990) concluded that the majority of language shifts were intergenerational, rather than intragenerational, which also supports the three-generation model. In a similar vein, Pigott and Kalbach (2005) found that generational status was the most important predictor for ethnic identity, which in turn has been tied to heritage language use.

Application of the three-generational model to present-day immigrant populations has been attempted but with mixed results. For example, Alba *et al.* (2002) found that while the rate of language loss in Asian heritage families was the same as the rate of Anglicization described by Fishman for European immigrants, Spanish heritage language speakers had a slower rate of language loss. Wiley (2001) also reported faster rates of language shifts for some immigrant populations, centering over two generations rather than three. These differences as compared to

the original model reveal that language use is a responsive entity, affected by socioeconomic, political, and cultural pressures that also change over time.

Factors Affecting Heritage Language Maintenance

A common perspective on heritage language usage is that it depends on two factors: opportunity and motivation (Zhang, 2010). In that sense, heritage language loss can be attributed to either a lack of opportunity to learn or practice the language, or a lack of motivation to learn or practice the language. In truth, the factors that affect heritage language maintenance are much more complex than these two simple factors. Wong-Fillmore (2000) argues that a variety of external and internal factors are at play when language is lost.

One such factor is the family environment. For example, Pigott and Kalbach (2005) found that the influence of language on ethnic identity was strongest when language was experienced within the home environment, and Portes and Hao (1998) found that those with the highest likelihood of maintaining a heritage language were children in high socioeconomic families with culturally homogenous parents who use the heritage language at home. This is because the family context plays multiple roles by not only shaping the emotional attitudes towards the heritage language, but also by providing exposure to the language and guiding acquisition (Melo-Pfeifer, 2015; Mu & Dooley, 2015). In addition, parents often have high expectations for their children when it comes to learning the heritage language (Park & Sarkar, 2007). This may direct some of the decisions that they make, such as participation in a heritage language program, or emphasizing the importance of literacy in the home. However, Brown (2011) also noted that societal pressures to learn English may suppress the use of heritage language at home, and the

resulting failure to maintain the heritage language can lead to strained relationships due to the difficulty communicating across generations (Wong-Fillmore, 2000).

The impact of family dynamics is not limited to immediate family members. Luo and Wiseman (2000) found that in addition to parental attitudes towards the heritage language and parent-child cohesiveness, grandparent-child cohesiveness also shaped heritage language maintenance. Similarly, Ishizawa (2004) documented the positive effect of living with grandparents on heritage language maintenance. The ability to converse with grandparents or other family member is also frequently cited as a reason for maintaining the heritage language (Gkaintartzi, Kiliari, & Tsokalidou, 2016; Park & Sarkar, 2007). This brings to the forefront the issue of intergenerational language transmission, as language use is not solely linear from generation to generation. However, it is interesting to note that language use may not necessarily be consistent within a generation. For instance, Kuo (1974) noted differences in heritage language use between the first-born and younger-born children. In addition, even though Brown (2011) interviewed individuals with strong oral fluency in the heritage language, the participant's younger siblings had "dismal" to no fluency at all in the same language. The findings of these studies reflect the complexity of describing the impact of the home environment on heritage language use.

Another factor is peer influence and the presence of a strong ethnic community (Cho, 2015; Luo & Wiseman, 2000; Siordia & Diaz, 2012; Tse, 2001). As the size and concentration of an ethnic population increases, so too does the resistance of a language shift to English (Siordia & Diaz, 2012). For example, Cho (2015) showed that being able to speak with others who were proficient in the heritage language helped to maintain Korean proficiency for second-generation Korean-

Americans. In addition, associating with peers who use the heritage language can also help to promote literacy skills (Tse, 2001). However, the strength of this effect can also vary depending on the age of immigration of the participants, as Luo and Wiseman (2000) reported that children who were born in the United States or that had immigrated before the age of five were more easily influenced by their English-speaking peers than their later immigrating peers.

Personal identity, especially ethnic identity, also plays a strong role in shaping heritage language use. For some ethnic groups, self-identification influences heritage language use, while other groups demonstrate that it is language use which impacts self-identification (Geerlings, Verkuyten, & Thijs, 2015). Other studies do not seek to find a directionality, but merely detail the interplay. For example, Zhang (2010) noted that heritage language maintenance is more likely in immigrant children who have already developed a sense of identity within an English-speaking community, as they then feel that using the heritage language is a choice, rather than a necessity. This reflects the complex relationship between identity and language use for heritage language speakers. One reason for the connection between language and cultural identity is the fact that a lack of fluency can restrict access to participation in an ethnic group (Geerlings *et al.*, 2015). In that vein, as heritage language use decreases, ethnic connectedness can also decrease (Pigott & Kalbach, 2005). Conversely, ethnic identity is also frequently cited as motivation to maintain the heritage language, with individuals feeling that since they look a certain way, they should also be able to speak the accompanying language (Park & Sarkar, 2007). To further complicate the matter, self-identification and language use may change over the lifespan as an individual matures. For instance, there is often an increase in the preference for English over the heritage language throughout adolescence (Geerlings *et al.*, 2015), but ethnic identity for

minority group members often strengthen in late adolescence or adulthood following periods of self-discovery and acceptance (Phinney, 1989). This reinforces the idea that identity and language use are not static characteristics, but that they undergo constant evolution.

The availability of language learning resources and the diversity of language environments to which an individual is exposed are also highly influential for heritage language maintenance. For many, a lack of access to appropriate resources in learning the heritage language can be detrimental (Cho, 2015; Kim & Pyun, 2014). In addition, the level of effort required to maintain a heritage language may be perceived as too demanding (Ho, 2011). However, in an increasingly globalized world, new options are emerging for the support of heritage languages. For example, convenient air travel has made visits to the heritage country more plausible, and this immersion into the heritage language and culture has been shown to be beneficial (Alba *et al.*, 2002; Cho, 2015). Similarly, modernization and the Internet has allowed pop culture to spread beyond geographical boundaries, so that immigrants are able to access entertainment in their heritage language. This acts as a motivating factor for heritage language learners, with many citing interest in music, television shows, or movies as reasons for maintaining the heritage language (Ho, 2011). Nevertheless, one of the best methods for increasing the number of contexts where the heritage language is used is the presence of a heritage language education program. It not only provides another environment for oral language use, but it also emphasizes literacy, which is not always the case in a home environment (Tse, 2001). This will be discussed in further detail in the final section of the literature review.

Chinese Immigrants

Some researchers have documented differences between various ethnic groups in the rate of language shift. For example, Alba *et al.* (2002) noted that Asian heritage families had a faster rate of language shift than Spanish speaking families. Similarly, Portes and Hao (1998) noted that Asian groups were most likely to switch to English monolingualism as compared to families of Mexican and Latin origin. However, it should be noted that both of these studies were conducted in the United States, where there is a substantial Spanish-speaking population. This may be affecting the dynamics of heritage language maintenance, as there is a stronger ethnic community and more numerous opportunities for heritage language use for Spanish speakers as compared to the smaller populations of Asian immigrants.

When comparing the rates of language attrition between immigrant communities, the degree of similarity between the heritage language and the dominant language should also be taken into consideration. Language transfer, which is the usage of grammar and sounds from one language in another, can certainly play a role for individuals who speak more than one language. While language transfer can help promote heritage language maintenance, it is strongest when the languages are similar (Bialystok, McBride-Chang, & Luk, 2005). Given the differences between Chinese and English, there may be limited language transfer, which could also contribute to the rates of heritage language loss. This lack of transfer may be most pronounced for reading and writing, given the contrast of logographic Chinese with alphabetic English.

The numerous varieties of Chinese also provide a challenge not seen in other languages. Scholars have long debated whether Mandarin, Cantonese, Taishanese, and other varieties should be

considered dialects of the same language, or separate languages altogether (Kurpaska, 2010; Mair, 1991; DeFrancis, 1984). Proponents of the former opinion point to the shared written form, while those in the latter camp believe that the lack of mutual intelligibility should distinguish them as distinct languages. However, it should be noted that factors beyond linguistics, such as politics and history, also play a role in the perception of these varieties as dialects or languages. In Chinese, the term 方言 ("regional speech") is used, as it acknowledges the differences between the varieties while maintaining the idea of one overarching common language. It is frequently translated as "dialect", even though the Chinese term does not bear the connotations of mutual intelligibility that the English translation does. For the purpose of this thesis, the term "dialect" will be used when differentiating between varieties of Chinese; however, the conventional term "heritage language" will still be used when referring to a specific dialect that a participant possesses due to familial, cultural and ethnic connections.

This variation between dialects also increases the complexity of the situation for Chinese-Canadian immigrants. For example, while they may share an ethnic identity, a Taishanese-speaking immigrant does not share a dialect with a Mandarin-speaking immigrant. As a result, it can be difficult to establish strong immigrant communities if there is a lack of mutual intelligibility. These challenges are also represented in orthography. While the same characters are utilized regardless of dialect, the pronunciation often differs. In addition, some dialects, such as Cantonese, are more colloquial so that some spoken words do not necessarily correspond well to written characters. This issue of dialectal differences must also be considered when examining the functioning of heritage language education. For example, many Chinese language programs choose to teach Mandarin due to its status as the standard dialect, despite the fact that the student

populations of such programs often possess a different dialect as a heritage language, such as Cantonese or Taishanese (Ho, 2011). This conundrum will be discussed more thoroughly in the Heritage Language Program section of the literature review.

A wide variety of studies have been conducted on Chinese immigrant populations, including examinations of the frequency and proficiency of Chinese usage, the receptive vocabulary abilities of preschoolers, and the differences in heritage language usage between dialectal groups (Kuo, 1974; Luo & Wiseman, 2000; Zhang, 2010). In general, the results support the importance of family dynamics, and indicate generational differences in heritage language groups, similar to the findings of the studies mentioned earlier. When looking specifically at different dialects, the literature demonstrates that heritage language maintenance is not uniform across the various groups. For instance, Zhang (2010) found that upper-class Mandarin-speaking parents acquired English but continued to use their heritage language out of choice. On the other hand, the lower-class Fujianese-speaking parents were not able to acquire English and were forced to use the heritage language out of necessity. These differences affected the way that language was transmitted to the offspring, as the Fujianese children did not have the option of using English with their parents while the Mandarin children did have that option. Incidentally, the situation of the latter group can be described as "receptive bilingualism", where the parents use the heritage language to speak to the child, but the child responds in English (Kuo, 1974). Receptive bilingualism often plays a role in the dynamics between first- and second-generations.

With regard to the second- and third-generations, the way that language is perceived can be very impactful. In a survey of second-generation Chinese immigrants in Calgary, Canada, Kim (1992)

found that language ranked as the most important part of Chinese culture, surpassing other aspects including traditional values, customs, or cultural artefacts. Again, this reflects the connections between language, identity and culture, which seems to be consistent across ethnic groups.

Heritage Language Programs

In discussing heritage language programs, it is important to note that heritage language speakers are different than those acquiring a first or second language, and they are also different than fluent bilinguals (Suarez, 2007; Zhang, 2010). Indeed, the term "heritage language learner" covers a diverse group of people in the midst of completing a variety of tasks, which could include learning features that were acquired incompletely, re-acquiring features that have been lost, learning a more standard dialect of the heritage language, developing literacy skills, or even acquiring expressive skills when only receptive skills are present (Valdés, 2017).

There is also a wide range of heritage language program types. Some are administered by English or other majority language speakers, and other programs are self-governed by the heritage language group; each method has its own benefits and limitations regarding language prestige and program efficacy (Valdés, 2017). Some programs are informal weekend schools that are organized by local religious groups or other community organizations. Others are immersion or bilingual programs offered within the school system (Kim, 1992). However, these programs all have the common goal of enriching and strengthening the heritage language by providing appropriate instruction, without the intention of transitioning the students to a majority language (Duff, 2008). It should be noted that mathematical models have shown that the maintenance of

bilingualism is only viable if bilingualism is valued highly enough to justify the costs and efforts required for the system (Templin *et al.*, 2016).

There are many benefits to strengthening the heritage language, including positive attitudes towards the heritage language, higher academic achievement, and stronger cultural identification (Duff, 2008; Paciotto, 2014). It has been suggested that the best approach is additive bilingualism, with optimal results occurring when children attend a school system where the heritage language and dominant language are both in use (Wong-Fillmore, 2000). Indeed, teachers who understand the benefits of maintaining a heritage language tend to be more attentive to the needs of heritage language learners, even if the students are not in an explicit heritage language program (Szilágyi, Giambo, & Szecsi, 2013). However, it is important to note that the effects of a heritage language program on an individual's heritage language proficiency may also fade over time, if language exposure is not continued (Bylund & Diaz, 2012). Similarly, the benefits of a heritage language program can also be quickly eroded if the support is removed (Seals & Peyton, 2017). In Canada, these supports include political policies that encourage the rights of minority languages, which are entrenched in the Canadian Bill of Rights (1960), the Canadian Charter of Rights and Freedoms (1982), and the Canadian Multiculturalism Act (1988). In contrast, the United States has some policies that attempt to emphasize English while suppressing minority languages (Rumbaut, Massey, & Hao, 2006). This includes the English Language Acquisition, Language Enhancement, and Academic Achievement Act (2001), which places a priority on English acquisition and views bilingual education program as a stepping stone to English proficiency, rather than as a method to bolster and strengthen minority languages. (Evans & Hornberger, 2005). There are also state specific laws, such as Arizona

Proposition 203 (2000) which limits the education options for English language learners. Historically, other states have had similar laws, such as the California Proposition 227 (1998) and the Massachusetts English Language Education in Public Schools initiative (2002) that instituted that students, including non-native speakers of English, be taught English in English-only classrooms. While these latter two laws have now been repealed or altered from their original form to make more allowances for bilingual education, they still emphasize the priority of acquiring English instead of fostering and maintaining minority languages.

The degree to which parents are willing to advocate and campaign for the implementation of heritage language programs varies (Gkaintartzi *et al.*, 2016), but many immigrant parents do view heritage language programs as a method to enhance the language abilities of their offspring, and often use them as a supplement to heritage language use at home (Brown, 2011; Szilágyi *et al.*, 2013). In truth, many students only attend heritage language programs out of respect to parental wishes (Brown, 2011; Kim 1992), rather than a personal desire to learn the language. When questioned, students reported disliking the classes and not finding them beneficial (Brown, 2011; Cho, 2015). Parental attitudes regarding heritage language classes must also be evaluated carefully, as the literature has shown that there can be a mismatch between the actions reported by individuals as part of their efforts for heritage language maintenance and what occurs in reality (Brown, 2011; Cho, 2015; Lao, 2004). For instance, a parent might report that they do not allow their children to use English in the home while the child reported that they use both the heritage language and English regularly (Brown, 2011). These contradictions can also extend to perceptions of the value of heritage language programs (Brown, 2011).

One of the most important factors for heritage language programs is the decision of what language, or even what form of the language, to teach. There is a predisposition to teach the most popular languages with a high number of speakers, and even within a language, to only teach "standard variant" of languages; this can be detrimental to those with less common heritage languages (Seals & Peyton, 2017). This bias is due to factors such as language prestige or the standardization of the language. For instance, languages with higher standing can be seen as more deserving of the effort needed to establish and sustain a heritage language program. In addition, it is easier to find instruction materials for a classroom when a language is well-established, and without standardization, literacy is nigh impossible to teach. The concept of only teaching "standard variants" has direct ramifications for the different dialects of Chinese. Those who speak a less prominent dialect, such as Taishanese, may find it more difficult to find a heritage language program that suits them than someone who speaks Mandarin, which is widely regarded as the standard variant of Chinese (Ho, 2011). Mismatches between a dialect spoken at home and the dialect taught in the classroom can affect not only the learning experience, but the shaping of one's identity (Wong & Xiao, 2010).

There are also other considerations to account for when developing and implementing a heritage language program. For example, heritage language learners may need a more targeted focus with formal grammar and literacy, as much of their previous exposure to the language may be restricted to oral components (Kim & Pyun, 2014). Almost half of the students in a weekend heritage language program reported being unsure about their abilities in reading and writing (Kim, 1992). Indeed, becoming literate in the heritage language may require focused practice, rather than simply regular exposure to the language (Kim & Pyun, 2014). However, if acquired,

literacy proves to be more indicative of heritage language maintenance than oral language proficiency (Kim & Pyun, 2014).

Another area to examine is the range of abilities among the students. As mentioned earlier, heritage language learners may be targeting different aspects of language use, and often present with unique language backgrounds (Valdés, 2017). Developing an appropriate curriculum is therefore a complex task. This problem is further compounded when non-heritage language learners also join the class, as a teacher accustomed to heritage language learners may feel unprepared to teach the language to someone with no exposure and no prior knowledge (Paciotto, 2014). The effort to accommodate such diversity may affect educational quality and place undue stress onto the program and its teachers.

As a result of all these different considerations, the efficacy of language programs also varies, making it hard to compare across the literature. Thus, any program must be examined individually for the impact it has on its students. In the present study, the Mandarin-English bilingual program in Edmonton, Canada provided an interesting case example for exploring the impact of such a program on heritage language transmission and maintenance.

DEFINITIONS

Heritage Language

Before continuing, several important terms need to be operationalized. Firstly, using Valdés (2005) as a reference, a "heritage language" can refer to "non-societal and non-majority languages spoken by groups often known as linguistic minorities." Heritage languages are

typically spoken in the home by families with a cultural or ethnic association with the language. For the purposes of this study, the heritage language of concern was Chinese. The dialects of focus were Cantonese, Taishanese, and Mandarin; all three are non-majority languages within Canada. The rationale for including Cantonese and Taishanese when only Mandarin is taught in the school program is twofold. Firstly, the literature indicates that heritage language maintenance is complicated when education systems only teach "standard variants" of a language (Seals & Peyton, 2017). For instance, it is quite difficult to find Cantonese or Taishanese classes when Mandarin is much more prevalent in the classrooms (Ho, 2011; Kim, 1992). For this reason, including Cantonese and Taishanese as heritage languages in this study is reflective of the real-world situation of trying to find an appropriate heritage language program.

The second reason to include all three dialects is a result of the immigration pattern of Chinese populations to Canada. Prior to the 1970's, many Chinese immigrants came from four counties in the Pearl River Delta region of China (四邑) where Taishanese is the most common language (Lai, 1975). Beginning in the 1970's, the majority of Chinese immigrants were from Hong Kong (Kim, 1992), where Cantonese is the primary language spoken. However, in recent years, more immigrants have begun to come from mainland China (Statistics Canada, 2013), where Mandarin is held as the standard dialect. Assuming that these trends will also be reflected in the students who participated in the Mandarin-English bilingual program, it was important to include all of these populations. During participant recruitment, Cantonese appeared as the most common heritage language; as a result, it bears the primary focus of this study. This may be due in part to the aforementioned immigration patterns, as many of the second-generation participants

recruited reported that they had parents who immigrated from Hong Kong between 1970 and 1990.

Mandarin-English Bilingual Program.

The second definition is in regard to the Mandarin-English bilingual program. In this study, the Mandarin-English bilingual program refers to a two-way language program integrated within the Edmonton Public School system (EPSB, n.d.). It is supported by the Edmonton Chinese Bilingual Education Association (ECBEA), a non-profit organization comprised of parents who have children enrolled in the program, whose goal is to promote the learning and understanding of Chinese language and culture (ECBEA, n.d.). This is the largest publicly funded Mandarin-English bilingual program outside of China (ECBEA, n.d.), and it provides an excellent opportunity to examine the impact of a language education program on heritage language maintenance. One reason for the success of this program is that the prairie provinces have historically been more accepting of heritage language programs than the metropolitan cities of Toronto or Montreal (Duff, 2008). In fact, Edmonton Public Schools offer bilingual and immersion programs in seven different languages, including American Sign Language, Arabic, Mandarin, French, German, Hebrew, and Spanish. Since its inception in 1982, the Mandarin-English bilingual program has grown to span thirteen schools (six elementary; four junior high; three senior high), with 1 996 students enrolled as of April 2017 (ECBEA, n.d.).

From kindergarten to grade six, instruction is split evenly, with half of the school day conducted in Mandarin, and half in English. For grades seven to nine, this ratio decreases to 25% of input in Mandarin, and drops further to 20% for grades ten to twelve (ECBEA, n.d.). The teachers are all

native-speakers of Mandarin and can provide high quality language input for the students

(ECBEA, n.d.). While historically, many students who have enrolled in the program do have a

dialect of Chinese as a heritage language, it is not intended to solely be a "heritage language

school". Enrollment is also open to those with no prior knowledge of Mandarin or other Chinese

dialects, thereby serving as a Chinese as a Second Language (CSL) or Chinese as a Foreign

Language (CFL) program. Conversely, the program also serves as an English as a Second

Language (ESL) program for recently arrived immigrants from China, Hong Kong, Taiwan, or

other Chinese-speaking areas. Those students often find that having input from both languages is

beneficial for learning English and adjusting to life in Canada. Due to these factors, a student in

this two-way bilingual program may have high knowledge of Mandarin, some knowledge of

Mandarin, or even no knowledge of Mandarin prior to beginning the program, introducing a

layer of complexity for the instructors, as noted earlier in the Literature Review.

First, Second, and Third Generation Status

Other terms that need to be defined include the terms "first-generation," "second-generation,"

and "third-generation." Here, the criteria used by Statistics Canada (2011) was used, along with

some modification based on the existing literature for the breakdown of generational cohorts

(Rumbaut, 2004). In the present study, a "first-generation" immigrant was defined as an

individual born outside of Canada who immigrated after the age of twelve. A "second-

generation" immigrant was either an individual born in Canada with at least one parent born

outside of Canada or an individual born outside of Canada who immigrated before and including

the age of twelve. Finally, a "third-generation" immigrant was defined as an individual born in

Canada, with both parents fulfilling the definition of a second-generation, and at least one grandparent born outside of the country.

While there are limitations to grouping those who immigrated in their early childhood along with other second-generation, the literature shows that those who immigrate before adolescence, also known as generation 1.5, behave more similarly to the second-generation than the first-generation in terms of language trends (Rumbaut, 2004). In addition, those who immigrate in early childhood show more susceptibility to heritage language attrition, while those who immigrate after adolescence show retained proficiency in the heritage language (Bylund & Diaz, 2012). This cut-off surrounding adolescence is also commonly reflected in literature for defining heritage language learners (Mu & Dooley, 2015), and has been tied to rates of acculturation (Cheung, Chudek, & Heine, 2011). For these reasons, the age of twelve was selected as a cutoff between first- and second-generation immigrants.

PURPOSE AND RESEARCH QUESTIONS

The primary objective of this thesis was to evaluate the heritage language abilities of second- and third-generation immigrants through direct assessment of language abilities to determine if attending a bilingual education program influences heritage language maintenance. In addition, interviews with first-, second-, and third-generation participants were conducted to provide insight into the way language is transmitted between generations. To that end, the research questions are as follows:

1. Does enrollment in the Mandarin-English bilingual program within the Edmonton Public School system affect heritage language proficiency in various dimensions, such as oral capability and literacy, for second- and third-generation Chinese immigrants?

2. If present, is the contrast between attendees of the Mandarin-English bilingual program and non-attendees of the program consistent between second- and third-generation participants?

3. To what extent do attitudes towards the heritage language and heritage language ability change with each generation?

In order to obtain a comprehensive look at the capabilities of the participants in their heritage language, oral receptive and expressive language proficiency were assessed along with reading and writing ability. This was coupled with questionnaires and a semi-structured interview to examine the perspectives and attitudes of the participants towards their heritage language.

HYPOTHESES

The following hypotheses were based on the information gathered during the literature review, as well as previous experience with and knowledge of the Mandarin-English bilingual program.

1. It was predicted that the influence of the Mandarin-English bilingual program on oral language tasks, such as listening and speaking, would be dependent on the heritage language of the participant. For those with a heritage language other than Mandarin, performance on listening and speaking tasks would be unaffected by participation in the Mandarin-English bilingual program. This is because the Cantonese and Taishanese

dialects are not part of the curriculum, making it is unlikely that participants would make any gains in those dialects through enrollment in the Mandarin-English bilingual program.

For literacy, it was predicted that those who attended the Mandarin-English bilingual program would obtain higher scores on tasks of reading or writing than participants who did not attend the program, regardless of the generational status or heritage language of the participants. This is because literacy in the heritage language is rarely taught in the home (Tse, 2001), whereas it is explicitly taught in the school. The targeted instruction of literacy through the Mandarin-English program allows students to display greater competence than individuals who did not attend the program. This benefit will be present regardless of heritage language of the participants as all dialects of Chinese utilize the same characters. Those with Cantonese as a heritage language should therefore experience similar benefits in reading and writing as someone with Mandarin as a heritage language.

2. If there is a difference in performance between participants who did and did not attend the Mandarin-English bilingual program, then it will be more distinctive for third-generation participants than for the second-generation. This is because both the second- and third-generation participants who take part in the Mandarin-English bilingual program will be educated according to a consistent curriculum, so language abilities should remain similar between the two groups. On the other hand, the three-generation model predicts a decrease in language ability from generation to generation, so without the presence of the Mandarin-English bilingual program as an equalizing factor, later generations should have

weaker heritage language abilities than earlier generation. This divergence will account for

the larger difference between those who did and did not attend the Mandarin-English

bilingual program in the third-generation.

3. Finally, it was predicted that there would be a negative linear relationship between

generational status and positive attitudes and abilities in the heritage language. For

example, if a participant belongs to a later generation, then they would have lower heritage

language abilities, as predicted by the three-generation model. This would also be

accompanied by decreased belief in the importance of a heritage language. The third-

generation will have lower scores and less passionate attitudes than the second-generation.

METHODS

Participants

To best address the research questions, this project sought out participants with certain

characteristics. Firstly, the scope of this study was limited to Chinese immigrants with

Cantonese, Mandarin, or Taishanese as a heritage language. These were chosen to reflect the

dominant dialects of Chinese immigrants as described above in the Literature Review. First-,

second-, and third-generation immigrants were all welcome to participate, regardless of actual

language proficiency in their heritage language.

Participants were also required to have resided in Canada for a minimum of two years. For

second- and third-generation participants, this minimum residency period was specified to

include at least two years of formal schooling in a Canadian setting. This qualification was based

on the existing literature, which indicated that the biggest language shift occurs when immigrant children enter the school system (Brown, 2011; Cho, 2015; Portes & Hao, 1998). The minimum of two years was set to allow for sufficient exposure to English as well as to the Mandarin-English program, if applicable. As a result of this expectation, the age of participation was similarly restricted to 8 years of age and above, as 8 is the age when children typically complete the second grade.

In order to avoid intragenerational variation in heritage language proficiency between siblings (Brown, 2011; Kuo, 1974), recruitment targeted firstborn individuals. In cases where data was gathered for two or more generations from within the same family unit, the priority for firstborn status was given to the representative of the lattermost generation. For example, in a first- and second-generation dyad, it was acceptable if the second-generation participant was a firstborn, even if the first-generation was not. Focusing on the younger generation helped to address the purpose of this project, which was to examine heritage language maintenance in later generations. The representative of the elder generation was primarily intended to provide supplementary perspectives on the way the heritage language was transmitted. Indeed, recruitment in families was completed whenever possible, as this resulted in more accurate depictions of language use within families and to gather information about generational trends.

Finally, to investigate the impact of the Mandarin-English bilingual program, it was essential that there be two groups; there was one which had attended the Mandarin-English bilingual program for at least two years and one which had never attended the Mandarin-English bilingual program. Having this distinction allowed for comparison to be made in terms of heritage language

proficiency for those who had attended the program and those who had not. Efforts were made to age match participants across the two groups.

Participants were recruited from local Chinese churches, personal acquaintances, and advertisements posted on social media groups, such as Facebook groups for Edmonton's Chinatown and ECBEA alumni. Snowball sampling was also employed, as some participants went on to refer other friends to join this study.

A total of 48 participants were recruited. This included 14 first-generation immigrants, 24 second-generation immigrants, and 10 third-generation immigrants. As shown in Figure 1, 26 participants did not have another relative in the study. On the other hand, 11 families were assessed in total, with 8 providing first- and second-generation perspectives, and 3 providing second- and third-generation perspectives. No household provided data from all three generations. The parent in each dyad merely participated in an interview, without attempting the entire battery of assessment tasks or any other direct assessment of their heritage language. As stated above, their primary role was to provide insight on the way the heritage language had been passed on to the next generation, if at all.

1st Generation	2nd Generation	3rd Generation
6 solo participants		
5 parents of MEB attendees	5 MEB attendees	
	5 solo MEB attendees	
3 parents of non-attendees of the MEB	3 non-attendees of the MEB	
	8 solo non-attendees of the MEB	
	2 parents of MEB attendees	2 MEB attendees

		3 solo MEB attendees
	1 parents of non-attendees of the MEB	1 non-attendee of the MEB
		4 solo non-attendees of the MEB

Figure 1: Overview of participants by generational status and Mandarin-English bilingual program (MEB) attendance. The shaded boxes indicate family dyads, while the red boxes outline the participants who had their heritage language directly assessed.

For the most part, the goal of finding firstborns was achieved, with only five non-firstborns counted among the thirty-one participants who had their heritage language directly assessed and included in the quantitative data analysis (Table 1 and Table 2). Despite their non-firstborn status, these participants were included in the study due to their passionate interest in the topic and to maximize the number of participants in this study.

Within the second- and third-generation participants who had their heritage language directly assessed, 15 attended the Mandarin-English bilingual program for seven or more years. This group is hereafter referred to as participants of the Mandarin-English bilingual program (MEBP group). The different durations of program attendance reflected some of the common reasons that students join and leave the program, such as moving neighbourhoods, a desire to attend other schools, and loss of motivation. The remaining 16 individuals never attended the Mandarin-English bilingual program (non-MEBP group). Attempts were made to age match the participants between the MEBP and non-MEBP groups in order to minimize maturation effects and allow for comparison between the two groups. In the second-generation, MEBP ranged in age from 20 – 29 years old with a mean age of 23.6, while non-MEBP ranged from 19 – 56 years

old and had a mean age of 27.2. For the third-generation, the ages ranged from 18 – 33 years old with a mean of 24.8 for MEBP, and a range of 8 – 34 years old with a mean of 17.2 for the non-MEBP group. Despite the variety in participant ages, a set of independent two-tailed *t*-tests conducted on SPSS revealed that the difference in age between the MEBP and non-MEBP groups was not statistically significant for the second-generation (*t*= -1.037, *p*= 0.322, *df*= 11.142), nor for the third-generation (*t*= 1.243, *p*= 0.259, *df*= 6.122).

Table 1: Demographics of second- and third-generation participants who attended the Mandarin-English bilingual program (MEBP).

Participant ID	Generational Status	Age	Gender	Firstborn Status	Heritage Language	Years in MEBP
MEBP-01	2	23	F	Y	Cantonese	K to 12
MEBP-02	2	23	M	Y	Cantonese	2 to 12
MEBP-03	2	23	F	Y	Cantonese	K to 12
MEBP-04	2	22	F	Y	Cantonese	K to 12
MEBP-05	2	27	M	N	Cantonese	3 to 9
MEBP-06	2	23	F	Y	Cantonese	K to 12
MEBP-07	2	20	M	Y	Cantonese	K to 10
MEBP-08	2	29	F	Y	Cantonese	K to 12
MEBP-09	2	23	F	Y	Cantonese	K to 12
MEBP-10	2	23	M	Y	Cantonese	K to 12
MEBP-11	3	23	M	Y	Cantonese	K to 12
MEBP-12	3	20	F	Y	Cantonese	K to 12
MEBP-13	3	33	F	Y	Taishanese	K to 12
MEBP-14	3	18	F	Y	Mandarin	K to 12
MEBP-15	3	30	M	N	Taishanese	K to 12

Table 2: Demographics of second- and third-generation participants who did not attend the Mandarin-English bilingual program (non-MEBP).

Participant ID	Generational Status	Age	Gender	Firstborn Status	Heritage Language
non-MEBP-01	2	22	F	Y	Cantonese
non-MEBP-02	2	20	F	Y	Cantonese

non-MEBP-03	2	24	M	Y	Cantonese
non-MEBP-04	2	22	F	Y	Cantonese
non-MEBP-05	2	19	F	Y	Cantonese
non-MEBP-06	2	34	F	Y	Cantonese
non-MEBP-07	2	56	F	Y	Taishanese
non-MEBP-08	2	21	F	N	Cantonese
non-MEBP-09	2	33	M	Y	Cantonese
non-MEBP-10	2	19	F	N	Cantonese
non-MEBP-11	2	31	M	N	Taishanese
non-MEBP-12	3	26	F	Y	Taishanese
non-MEBP-13	3	34	F	Y	Taishanese
non-MEBP-14	3	8	M	Y	Cantonese
non-MEBP-15	3	10	M	Y	Cantonese
non-MEBP-16	3	8	M	Y	Cantonese

While the primary focus was on the heritage language abilities of second- and third-generation immigrants, this study also included first-generation immigrants. The purpose was twofold; inclusion of the first-generation helped to evaluate the current model of generational heritage language loss as well as provide deeper insight into the language attitudes and environments that shaped how second- and third-generation Chinese immigrants were raised. As the overall objective was examination of intergenerational language transmission, excluding the first-generation would reduce the validity of the results. Because the first-generation was included in data collection primarily to see how their language attitudes may have affected later generations, they did not participate in any direct assessment of their heritage language. Indeed, they were assumed to be proficient users based on their exposure to Chinese prior to immigrating to Canada, including receiving formal schooling in Chinese.

In addition, the first-generation was not divided into the MEBP and non-MEBP distinction that second- and third-generation participants were. This was done to eliminate the potential of confounding effects from alternative routes of education in the heritage language. For example,

if a participant did not attend the Mandarin-English bilingual program but completed his/her schooling using his/her heritage language in a country outside Canada, the participant would have been classified in the non-MEBP group despite significant exposure to the heritage language in a formal school setting. This could have impacted analysis of the impact of the Mandarin-English bilingual program and was therefore circumvented.

Procedure

This paper endeavoured to gain a comprehensive look at the heritage language abilities of the 21 second-generation and 10 third-generation Chinese-Canadian immigrants by integrating both quantitative and qualitative data. The quantitative component included direct measures of oral receptive and expressive language, along with an examination of literacy through reading comprehension and writing tasks. This was accompanied by qualitative data gathered from a questionnaire about language environments, as well as a semi-structured interview designed to gain insights into the perspectives of the participants regarding their heritage language (Table 3). Roughly half of these participants from each generation had attended the Mandarin-English bilingual program, allowing for comparisons between the MEBP and non-MEBP groups.

An additional 17 participants completed interviews only (Table 3). Of these, 14 were first-generation immigrants, and 3 were second-generation. In addition to 6 solo participants, all of the parents in the parent-child relationships described in Figure 1 were also in this group, with 7 parents of MEBP and 4 parents of non-MEBP. These interviews were used as a supplementary source of information to further investigate attitudes and perspectives regarding heritage language use and the Mandarin-English bilingual program.

Table 3: Overview of quantitative and qualitative assessment tasks administered to various

participant groups

	1st Gen. Participants (*n* = 14) 2nd Gen. Parents (*n* = 3)	2nd Gen. Participants (*n* = 21) 3rd Gen. Participants (*n* = 10)
Indirect Assessment (Qualitative)	Interview	Interview
		Questionnaire (LEAP-Q)
Direct Assessment (Quantitative)		Oral Receptive Vocabulary (PPVT-4)
		Oral Narrative (TNL)
		Reading Comprehension (HSK)
		Written Language (TOWL-4)

As shown in Table 3, the number of tasks that each participant was asked to complete varied

depending on generational and familial status. However, in any generation, if the participant

reported that they did not feel competent enough to complete a certain task, they were allowed to

decline that portion. For example, some participants declined the writing task entirely, as they

indicated that they could not write a complete story. If a participant chose not to complete a

section, it was marked as "declined." A notation of "declined" was thus distinguished from a

score of zero or other any other lowest score, which was the result when a participant attempted

the task and was unable to perform it successfully. This method of recording incomplete data

was chosen over assigning the participant the lowest possible score, as this second option had the

potential of creating outliers and skewing the data. Instead, the number of refusals in the MEBP

and non-MEBP groups were noted and compared during data analysis.

Direct Assessments (Quantitative)

This study was complicated by the nature of cross-cultural assessment, which makes it difficult

to find standardized tests that are appropriate for heritage language learners (Carter *et al.*, 2005).

In any situation, the standard scores for any test must be applied cautiously due to possible

differences between those being tested and the population on whom the test was originally normed. For this study, several existing assessment tasks were modified from English to suit the heritage language, which made comparison to the standard scores unsuitable. Instead, the raw scores were used for direct comparison between the MEBP and non-MEBP groups, or between the second- and third-generations. This approach will be further outlined in the appropriate description for each task.

To assess multiple dimensions of heritage language proficiency, a variety of direct assessment tools were used. In brief, they included a test of oral receptive vocabulary, an oral expressive narrative task, reading comprehension questions, and a written narrative. All assessments were conducted in the heritage language. A test of oral receptive vocabulary in English was also administered to verify typical abilities in the dominant language of the region. These tasks are described in further detail below.

Oral Receptive Vocabulary (PPVT-4). This task was selected to assess the participant's oral receptive vocabulary abilities in both their heritage language and in English. To prevent order effects, the decision to administer the English or the heritage language first was randomized through flipping a coin. English was included in this task in order to determine if the participants have a sufficient grasp of the majority language or if they are monolingual users of the heritage language. Receptive vocabulary in English was measured using the Peabody Picture Vocabulary Test – 4th Edition (PPVT-4) (Dunn & Dunn, 2007). As each of the participants assessed with the PPVT-4 in English indicated that English was their dominant language, it was deemed appropriate to use the standard score derived from the raw score obtained from this task.

Although Cantonese and Mandarin versions of the PPVT do exist (Cheung, Lee & Lee, 1997; Lu & Liu, 1998), they are only intended for use up to the age of six and twelve respectively, which was insufficient for the adult population of this study. Therefore, Form B of the PPVT-4 was translated to Cantonese, Taishanese, and Mandarin, following a procedure similar to that used by Bialystok *et al.* (2005). Translations were carried out by two native speakers of the appropriate heritage language, and then piloted for appropriateness with two additional native speakers prior to usage in this study. A native speaker of each dialect recorded the vocabulary words, and the appropriate recording was played for the participants during the assessment. Because these translated versions are not normed, only raw scores were used during analysis. For this task, the raw score was the number of items that the participant answered correctly, with the highest possible score being 238 and the lowest score 0.

With both the English and Chinese versions of the PPVT-4, the participants were asked to start at the appropriate section for their age, and the assessment proceeded following the appropriate rules for basal and ceiling levels as set out by Dunn and Dunn (2007) apart from the following exception. In the situations where a basal level was not achieved, scoring was terminated at the first ceiling set, rather than highest ceiling set, as was typical for the other participants (Dunn & Dunn, 2007). This change was made as it was likely that the age start was too complex for these participants, and the completion of multiple extraneous sections in the pursuit of a basal provided numerous opportunities for guessing and score inflation.

Oral Narrative (TNL). After the receptive vocabulary tests were administered, the participant was asked to use their heritage language to generate a narrative based on a picture

prompt. The picture was taken from the Test of Narrative Language – Second Edition (TNL-2) (Gillam & Pearson, 2017), and the language samples were recorded and later rated by three independent listeners who were native speakers of the heritage language. Taishanese was the exception, as only two raters were recruited. The samples were ranked on a seven-point Likert scale for accentedness, comprehensibility, and fluency (Figure 2). Here, accentedness was defined based on comparison to a native speaker, while comprehensibility was the ease of understanding the participant's speech. Finally, fluency was the smoothness and ease of the participant's speech.

	1	2	3	4	5	6	7
Accentedness	- Native speaker			- Moderate accent			- Very heavy accent
Comprehensibility	- Can understand everything			- Can understand half			- Did not understand anything
Fluency	- Smooth, natural speech			- Some pauses and "um"			- Awkward disjointed speech
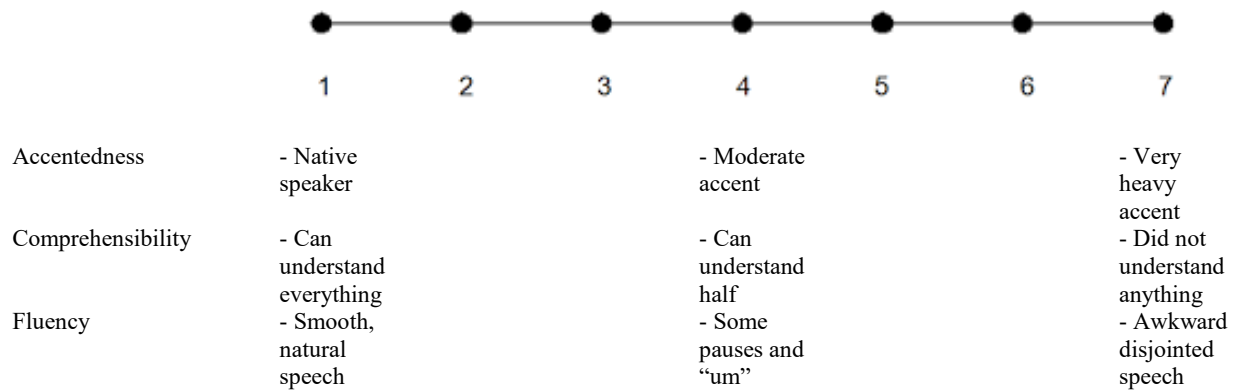
Figure 2: Likert scale for speech parameters of accentedness, comprehensibility, and fluency

Before rating the participants, the raters were first given a practice speech sample and asked to provide a rating to ensure that all raters had similar concepts of the three parameters. On the practice sample, all raters were within one point on the Likert scale for accentedness, comprehensibility, and fluency, suggesting that the raters could continue with the participant samples. The raters were blinded to the generation and MEBP / non-MEBP status of all participants, as well as to the scoring of the other raters.

The ratings were averaged to give participants a single score for each of the three domains of accentedness, comprehensibility, and fluency. As seen above, each was scored out of a total of 7. In addition, each participant was given a total score for oral narrative ability that was derived from adding up the scores of the three parameters. This total score was out of 21, with a lower score indicating a more native-like speaker, and a higher score indicating a less native-like speaker.

Reading Comprehension (HSK). While parents often value oral abilities above literacy in the heritage language (Gkaintartzi *et al.*, 2016; Park & Sarkar, 2007), it was deemed important to assess literacy along with oral ability in order to gain a more complete picture of the individual's heritage language proficiency. Although biliteracy exists on a continuum (Hornberger, 2008), it is acknowledged that reading and writing tend to be one of the first aspects of a heritage language to be lost (Tse, 2001).

Reading comprehension was assessed with multiple choice questions drawn from the 2013 version of the Chinese Proficiency Test, which is also known as the Hanyu Shuiping Kaoshi (HSK) (Hanban, n.d.). The HSK is a standardized test designed for non-native speakers of Chinese. Given that the second- and third-generation immigrants are raised in Canada and exposed to English within the school system, they are likely to qualify as the intended targets of the test. Since Cantonese, Taishanese and Mandarin use the same written characters, the reading comprehension portion of the HSK can be applicable to all three heritage languages. These questions were made available using both Traditional and Simplified characters, depending on the preference and familiarity of the participant with each orthographic system.

There are six levels to the HSK (Hanban, n.d.), so the use of questions from progressive levels helped to distinguish between participants who only have a basic grasp of reading in the heritage language from those with more advanced proficiency. From Level One to Level Six, the questions ranged from matching pictures to single words, to reading paragraphs and answering a series of multiple choice questions (see examples in Appendix A). Questions were administered level by level, with a discontinue rule being applied when the participant got 50% or fewer of the items at that level correct. The participant also had the option to discontinue if they reported that they were no longer able to understand the questions.

Participant responses were scored for accuracy using an answer key available online for Levels Three, Four, Five, and Six (China Education Center, n.d.), and self-generated for Levels One and Two. On this task, the number of correct items became the raw score for each participant. The highest possible score was 24 and the lowest score was 0.

Written Language (TOWL-4). In order to elicit a written sample to complete the literacy assessment, a subtest from the Test of Written Language – Fourth Edition (TOWL-4) (Hammill & Larsen, 2009) was administered. First, the participants listened to a sample story in English that was meant to demonstrate the expectation for a complex and complete piece of writing. Afterwards, they were shown a picture prompt and asked to write a story in their heritage language to accompany it. A rubric was adapted from the TOWL-4 to allow for grammatical differences between English and Chinese (see Appendix B). The scoring resulted in one score for contextual conventions, which included grammar and other technical aspects, and another score for story composition. After practice scoring with a trial story, a native speaker of

the heritage language marked each sample for factors such as correct printing of the Chinese characters, vocabulary choices, and plot complexity to result in the two scores mentioned above. This is in line with the marking procedure used in the standard administration of the TOWL-4 for spontaneous writing samples. A total score that combined the contextual conventions and story composition sub-scores was assigned to each participant. The highest possible score for this task was 47 and the lowest was 0.

Indirect Assessment (Qualitative)

In order to best capture the subtleties surrounding heritage language usage, a mixed methodology approach was used, with quantitative and qualitative data being obtained and given equal consideration. Both types of data were gathered concurrently, analyzed independently, and then integrated together during the discussion in a typology that could be described as a convergence model within the triangulation design of mixed methodology (Creswell & Plano Clark, 2007; Nastasi, Hitchcock & Brown, 2010). This was chosen as the all of the assessment tasks contribute towards an understanding of heritage language usage, with neither quantitative nor qualitative data taking priority.

Questionnaire (LEAP-Q). Participants were first asked to complete a questionnaire regarding their language exposure and use for both their heritage language and English. This was based on the Language Experience and Proficiency Questionnaire (LEAP-Q), a previously established and tested tool for examining language exposure for multilingual speakers (Marian, Blumenfeld, & Kaushanskaya, 2007). The LEAP-Q has been shown to have validity for assessing adult populations and has also been adapted for parental answers on behalf of their

children. The LEAP-Q has also been translated into Chinese by previous researchers fluent in the language, allowing for easy administration to participants who are more comfortable with Chinese rather than English. Participants were given the option of completing this questionnaire on paper or online, with 8 opting for paper and 20 opting for an electronic version. Participants also had the choice of completing the questionnaire in advance of the face-to-face session or during the session itself.

Interview. Finally, a brief semi-structured interview was also conducted to provide supplementary qualitative data about the participant's attitude towards their heritage language and language maintenance. These interviews ranged from 2 to 26 minutes long, with a mean duration of 7 minutes and 21 seconds. The questions addressed the contributing factors for heritage language maintenance or loss, such as family dynamics, social circles, and the participant's attitude toward the language (Appendix D). The participant was allowed to choose from Cantonese, Mandarin or English for the interview, and he/she was informed that the interviewer was able to understand any of the above languages. Taishanese was not provided as an option, as the interviewer did not have competency in this dialect. All interviews were audio recorded. English interviews were later transcribed word-for-word by the interviewer or a volunteer, and Cantonese interviews were translated to English and transcribed by the interviewer. All translated transcriptions were then verified by a native-speaker for accuracy and faithfulness to the original audio. The decision to translate the Cantonese interviews was made due to the fact that the colloquial nature of Cantonese does not always correlate well with a written form in Chinese. There were no participants who selected Mandarin as an option. The

transcripts were entered into NVivo (Version 12, 2018), a qualitative data analysis software package.

The analysis of transcripts was approached in a conventional content analysis method, in which the themes for analysis were identified after examining the data (Hsieh & Shannon, 2005). After several preliminary readings, the lead investigator assigned descriptive labels to the responses given by the participants. Based on relatedness, these labels were then grouped together under larger topics or themes. At this point, an independent volunteer was asked to read the transcripts and verify that the suggested themes were an accurate and thorough representation of the interviews. Once the themes were agreed upon, all the transcripts were reanalyzed by the lead investigator and volunteer, looking for any additional content that fit these specific themes. NVivo was used to help code as well as organize the qualitative data.

RESULTS

To best answer the first two research questions, the quantitative and qualitative data were divided into generational groups. Within the second- and third-generations, the 31 participants who took part in direct and indirect assessment were also divided into MEBP and non-MEBP groups. To analyze the quantitative data, two-sample one-tailed t-tests were used wherever possible to compare the MEBP with the non-MEBP scores for each measure, including oral receptive language, oral expressive language, reading, and writing. If there was an assessment task in which the MEBP or non-MEBP group failed to produce a score, then a one-sample one-tailed t-test was used, allowing the lone group to be compared against a reference score specific to each task. One-tailed t-tests were used as it was predicted that the Mandarin-English bilingual

program would either improve or have no effect on heritage language ability; decreased language ability was not judged to be a likely outcome.

As previously mentioned, the primary heritage language of the participants was Cantonese. Of the 31 participants who had their heritage language directly assessed, there were only five with Taishanese and one with Mandarin as a heritage language. Thus, unless Taishanese or Mandarin is specifically mentioned in the results, the term heritage language will typically refer to Cantonese.

Quantitative Results

Overview. The second-generation participants, regardless of MEBP or non-MEBP status, all demonstrated some level of heritage language proficiency, as each person attempted some, if not all of the tasks (Tables 4 and 5).

Table 4: Direct assessment results for second-generation MEBP participants.

MEBP Participants	Oral Receptive Vocab.		Oral Narrative Raw Score	Reading Comp. Raw Score	Written Language Raw Score
	English Standard Score *(Mean= 100; SD=15)*	**Heritage** Raw Score *(Range= 0 to 238)*	*(Range= 0 to 21)*	*(Range= 0 to 24)*	*(Range= 0 to 47)*
MEBP-01	113	210	11.00	22	25
MEBP-02	110	194	11.33	20	15
MEBP-03	111	213	6.67	22	28
MEBP-04	104	196	6.33	20	38
MEBP-05	119	220	6.67	23	31
MEBP-06	116	217	6.67	23	22
MEBP-07	116	90	Declined	7	Declined
MEBP-08	119	220	5.33	23	26
MEBP-09	104	197	9.33	10	15
MEBP-10	117	221	6.00	24	33

Mean:	*112.90*	*197.80*	*7.70*	*19.40*	*25.89*
Standard Deviation:	*5.59*	*39.32*	*2.24*	*5.93*	*7.75*

Table 5: Direct assessment for second-generation non-MEBP participants.

Non-MEBP Participants	Oral Receptive Vocab.		Oral Narrative Raw Score	Reading Comp. Raw Score	Written Language Raw Score
	English Standard Score *(Mean= 100; SD=15)*	Heritage Raw Score *(Range= 0 to 238)*	*(Range= 0 to 21)*	*(Range= 0 to 24)*	*(Range= 0 to 47)*
non-MEBP-01	100	121	9.67	0	Declined
non-MEBP-02	113	203	15.67	18	4
non-MEBP-03	121	194	7.33	7	Declined
non-MEBP-04	105	210	8.67	5	12
non-MEBP-05	113	177	10.67	3	Declined
non-MEBP-06	110	100	19.33	6	Declined
non-MEBP-07	99	99	12.50	Declined	Declined
non-MEBP-08	111	194	7.33	1	Declined
non-MEBP-09	101	177	12.67	7	Declined
non-MEBP-10	121	181	14.33	2	3
non-MEBP-11	103	196	10.00	19	9
Mean:	*108.82*	*168.36*	*11.65*	*6.80*	*7.00*
Standard Deviation:	*7.88*	*41.29*	*3.71*	*6.63*	*4.24*

While the second-generation all displayed some proficiency with the heritage language

regardless of MEBP or non-MEBP status, this was not evident with the third-generation. Here,

the differences between MEBP and non-MEBP were more pronounced, with the latter showing

little to no ability in the heritage language at all (Tables 6 and 7). This performance contrasted

with the MEBP group, which had four members attempt all of the tasks in the heritage language.

Table 6: Direct assessment results for third-generation MEBP participants.

MEBP Participants	Oral Receptive Vocab.		Oral Narrative Raw Score	Reading Comp. Raw Score	Written Language Raw Score
	English Standard Score	Heritage Raw Score			

	(Mean= 100; SD=15)	(Range= 0 to 238)	(Range= 0 to 21)	(Range= 0 to 24)	(Range= 0 to 47)
MEBP-11	107	189	11.33	10	4
MEBP-12	121	40*	19.00	10	22
MEBP-13	110	Declined	Declined	2	Declined
MEBP-14	121	110	12.67	17	20
MEBP-15	114	15*	17.50	15	11
Mean:	*114.60*	*88.50*	*15.13*	*10.80*	*14.25*
Standard Deviation:	*6.35*	*78.14*	*3.70*	*5.81*	*8.34*

* represents a failure to achieve a basal level on an assessment task

Table 7: Direct assessment results for third-generation non-MEBP participants.

Non-MEBP Participants	Oral Receptive Vocab.		Oral Narrative	Reading Comp.	Written Language
	English Standard Score (Mean= 100; SD=15)	Heritage Raw Score (Range= 0 to 238)	Raw Score (Range= 0 to 21)	Raw Score (Range= 0 to 24)	Raw Score (Range= 0 to 47)
non-MEBP-12	114	Declined	Declined	Declined	Declined
non-MEBP-13	92	Declined	Declined	Declined	Declined
non-MEBP-14	130	7*	Declined	Declined	Declined
non-MEBP-15	129	Declined	Declined	Declined	Declined
non-MEBP-16	123	Declined	Declined	Declined	Declined
Average:	*117.60*	*7.00*	*--*	*--*	*--*
Standard Deviation:	*15.66*	*--*	*--*	*--*	*--*

*represents a failure to achieve a basal level on an assessment task

Oral Receptive Vocabulary. Despite this paper's focus on heritage languages, the results of the English version are also of interest, as a commonly cited reason for not choosing the Mandarin-English bilingual program was that English language learning will suffer as a result of the time spent on Mandarin. Indeed, a participant expressed that her parents thought "English classes in bilingual schools [were not] as good as other schools" (non-MEBP-02 interview). On the contrary, the data shows that both the MEBP and non-MEBP achieve high

levels of English vocabulary proficiency, with no statistical difference between the two groups in either the second-generation (t= 1.355, p= 0.096, df = 19) or third-generation (t= -0.397, p= 0.351, df= 8). As all participants indicated that they were English dominant speakers and had been exposed to the language for the majority of their lives, the standard scores for this particular assessment task were deemed appropriate for use.

Conversely, the very act of translating the PPVT-4 to various Chinese dialects negated the ability to use standard scores. While it should be acknowledged that vocabulary comprehension may change with age, this study elected to utilize the raw scores from each translated PPVT-4, as the average age between the MEBP and non-MEBP groups was not statistically different. Within the second-generation, there was no statistical difference between the two groups of participants (t= 1.669, p= 0.093, df= 19). This also proved to be true for the third-generation (t= 0.933, p= 0.210, df= 3). It should also be noted that the third-generation MEBP and non-MEBP groups both included participants who were not able to achieve a basal on this task. This reflects the third-generation MEBP's incomplete grasp of oral receptive language, as compared to second-generation participants.

The impact of Mandarin as the dialect of instruction in the Mandarin-English bilingual program also began to manifest for the third-generation MEBP group. For example, MEBP-12 reported that she would have felt more comfortable listening to the vocabulary list in Mandarin, the dialect she learned in school, rather than Cantonese, her heritage language. This was not mentioned by any second-generation participant in the MEBP group.

Oral Narrative. In the second-generation, every participant aside from one MEBP participant was able to produce a speech sample. The overall scores indicated that the spoken language scores of the second-generation MEBP and non-MEBP were not statistically different (t = -2.792, p = 0.056, df = 18). However, closer examination of the three sub-categories did reveal some statistical significance. In regard to accentedness (t = -2.031, p = 0.023, df = 18) and comprehensibility (t = -4.245, p = 0.000, df = 18), those who attended the MEBP had lower scores. This indicates that the MEBP participants had speech that sounded more like native-like, and they were easier to understand than their counterparts who did not attend the Mandarin-English program. There was no statistical difference for fluency between the two groups in the second-generation (t = -1.638, p = 0.060, df = 18).

For the third-generation, there was a significant difference between the MEBP and non-MEBP groups in overall performance (t= -3.165, p= 0.026, df= 3) when a score of 21, the lowest possible score, was assigned to as a reference score for comparison in a one-sample one-tailed t-test. It should be noted that a score of 21 is not an ideal representation of the performance of non-MEBP group, as this score still implies some competency in speaking the heritage language when in reality there was no such ability. As with the oral receptive vocabulary task, some members of the third-generation MEBP group had difficulty with keeping Mandarin and their heritage language separate in this oral narrative. For instance, MEBP-12 alternated between the two dialects during her speech sample. This reflects the large role that the Mandarin-English bilingual program played in shaping her Chinese proficiency.

Reading Comprehension. The differences between the second-generation MEBP and non-MEBP groups was more pronounced with the literacy tasks. There was a statistically significant difference between the two groups on the reading task (t= 4.080, p= 0.000, df= 18), with the MEBP participants obtaining better scores. It is also of note that two of the non-MEBP participants declined this task due to language abilities, while all ten of the MEBP participants attempted the task.

For the third-generation, there was a statistical difference (t= 4.160, p= 0.007, df= 4) when a score of zero, the lowest possible score, was assigned as the reference score. Interestingly, participant MEBP-13, who had declined to do the oral receptive and expressive tasks, did attempt this task. She reported that while she felt like she had forgotten almost everything she previously knew, she had recently started re-learning Chinese. The reason for this was that she often had to help her daughter, who was currently attending kindergarten with the Mandarin-English bilingual program, with her Mandarin reading and writing. This suggests that the impacts of the Mandarin-English bilingual program may also extend to parents of current students by creating contexts and opportunities for language use.

Written Language. In the second-generation, seven of the non-MEBP participants did not attempt the task altogether, citing an inability to write a complete story in Chinese, while only one MEBP member provided the same reason. For the writing samples that were collected, there was a noticeable difference in quality. Within the non-MEBP group, two of the three participants who completed the task only wrote one complete sentence in Chinese, while the third member wrote the majority of the story using a non-standardized, self-created phonetic

transcription of the desired characters. On the other hand, the MEBP group produced samples that were more complex in plot, and more accurate in terms of grammar and printing. When the raw scores were compared, the MEBP group had significantly higher scores than the non-MEBP participants (t= 4.508, p= 0.001, df= 11).

There was also a statistical significance for the third-generation MEBP and non-MEBP groups when a score of zero, the lowest possible score, was assigned as the reference point in the single sample t-test (t= 3.417, p= 0.021, df= 3). There were also significant qualitative differences between the two groups, as the MEBP group was able to write several sentences or paragraphs in their heritage language, while the non-MEBP group was not able to write a single word.

Qualitative Results

Questionnaire (LEAP-Q). This questionnaire investigated concepts such as language preference and factors for language acquisition. It also allowed participants to express their own perception for concepts such as cultural identification, and heritage language proficiency

Language Preference. Despite all second-generation participants indicating that the first language acquired was indeed their heritage language, a preference for English was already prevalent by this generation. When choosing to read a text available in any language known by the participant, both MEBP and non-MEBP members indicated a strong preference for English (Table 8). This preference for English was similarly mirrored in language selection when conversing with a partner who is equally proficient in all languages, albeit less pervasively (Table 8). Based on this self-report, it can be inferred that a language shift has already taken

place in this generation, regardless of the actual proficiency in the heritage language for these participants.

Table 8: Self-reported percentage of time that second-generation participants would choose to read or converse in English when options for all languages are available.

MEBP Participants	Reading in English	Conversing in English	Non-MEBP Participants	Reading in English	Conversing in English
MEBP-01	100	100	non-MEBP-01	100	90
MEBP-02	100	100	non-MEBP-02	90	90
MEBP-03	90	100	non-MEBP-03	100	95
MEBP-04	80	50	non-MEBP-04	Incomplete	Incomplete
MEBP-05	100	70	non-MEBP-05	100	80
MEBP-06	100	99	non-MEBP-06	100	100
MEBP-07	100	100	non-MEBP-07	100	95
MEBP-08	98	90	non-MEBP-08	100	75
MEBP-09	100	96	non-MEBP-09	100	50
MEBP-10	85	90	non-MEBP-10	100	99
			non-MEBP-11	90	80
Mean:	*95.30*	*89.50*	*Mean:*	*98.00*	*85.40*

Factors for Acquisition of the Heritage Language. Respondents were also asked to rank how important various factors were in terms of acquiring the heritage language; this included factors such as family, television, and languages classes (see Appendix C). For 90.5% of the second-generation participants, family was given the highest relative score out of the seven factors. Conversely, language classes only received the highest relative score for two participants, both of whom belonged to the non-MEBP group. When questioned, these participants both indicated that they had attended Cantonese language school on the weekends during their childhood. The importance of the home environment also continued in questions about the extent of current exposure to the heritage language, with 85.7% of participants again assigning the highest relative score to family, and only one participant choosing a language program.

The third-generation non-MEBP participants all self-reported that they were not proficient in their heritage language and did not have any anything to report on current exposure to, or factors influencing learning of, the heritage language. Thus, for the third-generation, the MEBP group was alone in providing information about factors contributing to their learning of their heritage language. Family was noted as the most important factor in language acquisition for MEBP-11 and MEBP-12, while MEBP-14, the sole participant with Mandarin as a heritage language, reported that language classes played the biggest role. The remaining two participants did not report any data on the environment for their heritage language.

Interestingly, the heritage language was not the first language acquired by any of the third-generation participants. This contrasts heavily with the second-generation, where the heritage language was noted as the first language acquired for all respondents. This demonstrates that yet another shift has occurred, as the first language that a generation is exposed to is no longer their heritage language, but English.

Cultural Identification. The LEAP-Q also asks respondents to list and rate cultures that they identify with (Appendix C). Here, there seemed to be less division between generations as all participants, including those unable to speak any dialect of Chinese, listed Chinese, Chinese-Canadian or some indication of their ethnic origin (i.e., Hong Kong, Malaysian) in their response (Table 9). The degree of identification appeared to vary from individual to individual, with some participants who scored highly on the direct language assessments in this study ranking their

identification with Chinese culture quite low, and other participants who scored low on the other

assessment tasks ranking their identification with Chinese culture quite high.

Table 9: Strength of identification with cultural group(s) as named and rated by participants

MEBP Participants	Self-Identified Culture(s) and Ratings*	non-MEBP Participants	Self-Identified Culture(s) and Ratings*
MEBP-01	Chinese: 9	non-MEBP-01	Canadian: 8 Chinese: 9
MEBP-02	Canadian: 10 Chinese: 8	non-MEBP-02	Chinese-Canadian: 10
MEBP-03	Canadian: 9 Chinese: 3	non-MEBP-03	Canadian: 9 Chinese: 1
MEBP-04	Chinese: 8 Canadian: 7	non-MEBP-04	Chinese: 9.5 Chinese-Canadian: 8 Canadian: 9.5
MEBP-05	Chinese-Canadian: 10 Canadian: 10 Chinese: 10	non-MEBP-05	Chinese: 9 Canadian: 9
MEBP-06	Canadian: 5 Chinese: 6	non-MEBP-06	Canadian: 8 Cantonese: 5
MEBP-07	Canadian: 8 Chinese: 5	non-MEBP-07	Chinese-Canadian**
MEBP-08	Canadian: 10 Chinese: 10	non-MEBP-08	Canadian: 9 Hong Kong: 3 Malaysian: 2
MEBP-09	Canadian: 7 Chinese: 6	non-MEBP-09	Canadian: 10 Chinese: 10 Hong Kong: 7
MEBP-10	Canadian: 8 Hong Kong: 4	non-MEBP-10	Canadian: 10 Chinese: 5
MEBP-11	Canadian: 7 Chinese: 5	non-MEBP-11	Canadian: 10 Chinese: 10
MEBP-12	Canadian: 8 Chinese: 7	non-MEBP-12	Canadian: 10 Chinese: 4
MEBP-13	Canadian: 10 Chinese: 8	non-MEBP-13	Chinese: 7 English (Welsh): 7 French: 5 African: 2
MEBP-14	Canadian: 8 English/Scot/Irish: 3 Chinese: 7	non-MEBP-14	Incomplete***
MEBP-15	Asian: 6	non-MEBP-15	Incomplete***

	Chinese: 6 Canadian: 10		
		non-MEBP-16	Incomplete***

*The rating scale used was outlined in the LEAP-Q (see Appendix C)
**No rating score was given by this participant
***Due to the age of these participants, the parental version of LEAP-Q was offered to their parents for completion, and cultural self-identification was not covered in this version

Self-Perception of Heritage Language Abilities. In a similar vein, participants were also asked to rate their listening, speaking, and reading abilities in their heritage language. The LEAP-Q utilized a 0 to 10 scale, with this investigation reinterpreting those numbers into three broad categories of low, medium, and high proficiency (see Table 10). The self-rated scores were then compared to the results obtained from the oral receptive vocabulary, oral narrative, and reading comprehension tasks respectively to gain insight into the accuracy of participant self-perception. In order to accomplish this, the raw scores obtained from those three assessments were also categorized into low, medium, or high proficiency. This was done for each task by placing the raw scores of all participants who completed the assessment in numeric order and dividing the scores into three categories with an approximately equal number of participants within each division. Exceptions were made for natural distribution breaks when dividing the groups into exactly equal groups would result in separating two participants who had equivalent, or close to equivalent raw scores (Table 10). Therefore, these labels of "low", "medium", and "high" proficiency can be seen as markers of relative performance as compared to the entire data set.

Table 10: Rating legend for oral receptive vocabulary, oral narrative, and reading comprehension assessment raw scores when converted into three levels of proficiency

Rating Category	Self-Rating Score	Oral Receptive Vocabulary	Oral Narrative	Reading Comprehension
Low proficiency	0 to 3	0 to 121	12.50 to 19.33	0 to 7

Medium proficiency	4 to 7	177 to 197	8.67 to 11.33	10 to 19
High proficiency	8 to 10	203 to 221	5.33 to 7.33	20 to 24

Table 11: Comparison of self-rated proficiency levels with relative proficiency levels acquired from quantitative assessment tasks for oral receptive vocabulary, oral narrative, and reading comprehension.

Participants	Self-Score Listening	Oral Receptive Vocab.	Self-Score Speaking	Oral Narrative	Self-Score Reading	Reading Comp.
MEBP-01	High	High	Medium	Medium	Medium	High
MEBP-02	High	Medium	High	Medium	Low	High
MEBP-03	High	High	Medium	High	Medium	High
MEBP-04	Medium	Medium	Medium	High	Medium	High
MEBP-05	High	High	High	High	Medium	High
MEBP-06	High	High	Medium	High	Medium	High
MEBP-07	Medium	Low	Medium	Declined	Low	Low
MEBP-08	High	High	High	High	High	High
MEBP-09	Medium	Medium	Medium	Medium	Low	Medium
MEBP-10	High	High	Medium	High	Medium	High
MEBP-11	Low	Medium	Low	Medium	Low	Medium
MEBP-12	Low	Low	Low	Low	Medium	Medium
MEBP-13	N/A*	Declined	N/A*	Declined	N/A*	Low
MEBP-14	Medium	Low	Medium	Low	Medium	Medium
MEBP-15	Incomplete	Low	Incomplete	Low	Incomplete	Medium
non-MEBP-01	Medium	Low	Low	Medium	Low	Low
non-MEBP-02	Medium	High	Medium	Low	Medium	Medium
non-MEBP-03	Medium	Medium	Low	High	Low	Low
non-MEBP-04	High	High	High	Medium	Medium	Low
non-MEBP-05	High	Medium	Medium	Medium	Low	Low
non-MEBP-06	Low	Low	Low	Low	Low	Low
non-MEBP-07	High	Low	Medium	Low	Low	Declined
non-MEBP-08	Low	Medium	Medium	High	Low	Low
non-MEBP-09	Medium	Medium	Medium	Low	Low	Low
non-MEBP-10	Medium	Medium	Medium	Low	Low	Low
non-MEBP-11	Medium	Medium	Medium	Medium	Low	Medium
non-MEBP-12	N/A*	Declined	N/A*	Declined	N/A*	Declined
non-MEBP-13	N/A*	Declined	N/A*	Declined	N/A*	Declined
non-MEBP-14	N/A*	Low	N/A*	Declined	N/A*	Declined
non-MEBP-15	N/A*	Declined	N/A*	Declined	N/A*	Declined
non-MEBP-16	N/A*	Declined	N/A*	Declined	N/A*	Declined

*Participant did not list any dialect of Chinese as a known language on the LEAP-Q

Blue denotes instances where a participant's self ranking was lower than their assessed level. Red denotes instances where a participant's self-ranking was higher than their assessed level.

Overall, participants had an accurate perception of their heritage language abilities approximately 49.2% of the time, with the most numerous discrepancies occurring for speaking abilities. This may be related to the highly subjective nature of assessing spoken language, whereas listening and reading comprehension can be more objectively measured. Participants were most likely to underestimate their abilities when it came to reading comprehension, which may be due to several reasons, such as the perception that Chinese is a difficult language to read, or a lack of exposure to Chinese reading in daily life as compared to oral language.

One major limitation of this approach was the variation in participant perception of what proficiency entails. For example, one participant may think that a ranking of 9 on the LEAP-Q scale (excellent proficiency) is best applied to native speakers, while another participant whose perception of proficiency has been shaped by exposure to second- and third-generation immigrant peers may think that their own non-native abilities are excellent for the contexts they personally experience. This disparity in thinking could also account for some of the mismatched self-ranking and quantitative assessment scores. In the future, this limitation could be addressed by providing participants with more clarity or reference points as to what each point on the scale indicates.

A second limitation is that the quantitative assessment scores only provide a score of relative strength as compared to the other participants of this study. As a result, a score of "high proficiency" may not actually correlate with the expertise of a native speaker or meet the

expectations of a Chinese-dominant environment. However, given that these second- and third-generation participants are experiencing life in Canada where Chinese is a minority language, these relative scores of low, medium, and high proficiency appear to match well with the level of performance needed for daily life as a Chinese immigrant.

Interview. As mentioned in the Methods section, the interviews were analyzed to identify common themes in participant responses. The topics discussed in the interviews included perceptions regarding the importance of the heritage language, current contexts for use of the heritage language, plans for language transmission to future generations, perceptions of the Mandarin-English bilingual program (if applicable), and identity (Table 12). The complete list of topics and resulting themes, along with an exemplar quote, are listed in Appendix E.

Table 12: Summary of major topics discussed by participants during a semi-structured interview

Topic	Definition
Importance of heritage language	Perceptions relating to the importance or non-importance of a heritage language, and a participant's supporting thoughts for that viewpoint
Current usage of heritage language	The factors and contexts that influenced participants to use or not use their heritage language at this present stage of their lives
Transmission of heritage language	The factors and contexts that are thought to have affected the acquisition of the heritage language in later generations, including language programs, home usage, and entertainment sources
Mandarin-English bilingual program	Responses directly related to the MEB program, including positive and negative perceptions, outcomes, and organization of the program
Cultural identity beyond language	Discussion relating to aspects of cultural identity and heritage that transcend language alone

Importance of the Heritage Language. Regarding the importance of the heritage language, all of the MEBP and non-MEBP within the second-generation stated that knowing the heritage

language was important, albeit with some participants adding the caveat that it was not always a necessary skill to have. Communication was often cited as a reason for maintaining the heritage language, with many participants mentioning their families within this sphere. As can be imagined, having parents who do not understand English would immediately place a larger urgency on maintaining the heritage language. This was exemplified by MEBP-01, who indicated that "all my family mainly speaks Cantonese, so I think it's a way for me to communicate with them." There were three second-generation MEBP had parents with zero to limited abilities in English, while all non-MEBP reported that their parents were able to understand English. However, even for those with parents who spoke English, it was noted that Chinese was still a valuable tool. As MEBP-08 stated, "I think it would be very difficult to communicate with them without [Chinese]. Even though they […] know English, I know it would be much more difficult to do so."

It is also important to note that the impact of interacting with a monolingual speaker of the heritage language is not limited to a parent-child relationship. A grandparent-grandchild dyad could also provide exposure to a monolingual speaker, such as for non-MEBP-07, who noted that she was "able to maintain [her] Chinese [by] speaking to [her] grandparents" who did not speak much English.

By the third-generation, some participants were reporting that they did not find the heritage language important, which differed from the responses of the second-generation. These responses occurred in both the MEBP and non-MEBP. For instance, even though MEBP-13 identified being able to use the heritage language as important, she also commented that with

"the way that we are in society and just the way that things are, I find [using my heritage language is] slowly losing it's […] attractiveness."

Apart from communication, participants also pointed to the link between language and culture, indicating that knowledge of the heritage language was important because "language is one way of accessing the culture" (PARENT-10). Other reasons to support the importance of the heritage language included the prestige of Chinese as a language, societal expectations, benefits for travel, benefits for future career opportunities, and the ability to consume entertainment in multiple languages.

Current Usage of the Heritage Language. Within the second-generation, one of the most common usages of the heritage language was in conversation with family members, but even this was reported to occur in unique ways. Some participants reported instances of receptive bilingualism, where they listened to their parents speaking in Chinese but replied in English or a mixture of Chinese and English (non-MEBP-02, non-MEBP-05, and MEBP-06 interview). Interestingly, the eight first-generation parents all indicated that they were content with the current heritage language abilities of their children, with the qualifying statement that they deemed it appropriate for use in Canada. However, at the same time, all eight parental participants also acknowledged experiencing misunderstandings or miscommunications with their children as a result of language. When participants expanded on the topic, it appeared that "surface level" conversations were perfectly manageable between generations, while problems tended to arise on "deeper" topics that were discussed less commonly. This disparity hints at the expectations and realities of what being competent in a language truly means.

For third-generation participants, heritage language usage was often limited to conversing with grandparents (MEBP-11 and MEBP-14 interview), as they tended to use English with their parents and siblings. When the parents of third-generation participants were interviewed, they acknowledged the low heritage language proficiency of their children.

Outside of the family dynamic, heritage language usage was reported to be fairly limited for both second- and third-generation participants, with occasional use at work or with other Chinese-speaking peers mentioned. However, it was made clear that speaking Chinese consistently in these environments was not the norm.

Oral language aside, there were not many reported opportunities for reading and writing in Chinese in daily life. PARENT-2 reported that her children "know how to read the entire menu" in Chinese restaurants, but other participants pointed out that "reading and writing is not necessary for everyday life" (MEBP-03). Indeed, even for the first-generation participants, it was reported that they "seldom write Chinese" (PARENT-15). Most first-generation parents indicated that they were satisfied with their children only possessing basic verbal proficiency in the heritage language as they felt that reading and writing in Chinese does not play a large role in Canadian life. For example, the PARENT-06 commented that her daughter's "reading and writing may not be very good" but for use in Canada, the need is "mostly listening and speaking." These parental attitudes are important to note as they do impact the way that language is transmitted to the next generation.

Transmission of the Heritage Language. Between the second- and third-generation, there was a marked change in the transmission of the heritage language, particularly in the impact of home usage. While 95% of the second-generation participants reported growing up in a household where they regularly heard their heritage language used, none of the third-generation had that same language environment at home. Instead, it was reported that the third-generation only heard the heritage language used for terms of endearment or for the names of relatives (non-MEBP-16 conversation). This trend was consistent, regardless of the reported heritage language proficiency of the parents. Given the importance of the home environment for exposure to the heritage language, this elimination has enormous ramifications on the heritage language experience of third-generation participants. In fact, this change may explain why the first language acquired by third-generation participants was consistently English, rather than a heritage language.

While none of the first-generation participants interviewed had grandchildren at the time of this study, several of them indicated that they did not expect the third-generation to speak the heritage language. One participant indicated that she would "leave it to [the second-generation]" (PARENT-05 interview) to decide whether to make the heritage language a priority, a sentiment echoed by several other first-generation participants. This lowered expectation may have consequences on the transmission of the heritage language, as the following generations may not feel the impetus to learn the heritage language if the older generation does not voice any support or preference for it. This proved to be the case for non-MEBP-12, who had accepted not knowing her heritage language, as she referenced the previous generation and stated that "my grandparents would have […] probably taught my parents more of their heritage language if it was that important to them". In addition, grandparents with such lowered expectations may not

attempt to speak the heritage language with their grandchildren, removing another source of language exposure for later generations.

Other factors for the transmission of a heritage language, apart from home usage, such as the benefits of a heritage language program, were viewed similarly positively by both second- and third-generation participants, regardless of MEBP or non-MEBP status. In fact, apart from regularly communicating with native speakers, a heritage language program was the most common suggestion for transmitting the heritage language to future generations.

Mandarin-English Bilingual Program. Both second- and third-generation MEBP participants were asked to discuss what they perceived to be the value of the Mandarin-English bilingual program to be. Participants frequently mentioned the value of the program in learning Mandarin, particularly in regard to literacy. However, the program was rarely mentioned in conjunction with their heritage language, as only one participant had identified Mandarin as her heritage language. Apart from language learning, other common sub-themes regarding the impact of the Mandarin-English bilingual program included friendships formed and cultural exposure. This is well-summarized in quote by MEBP-09, who stated that "I think language only played a really small part. I got to learn a lot about the culture and what it means to be a Chinese-Canadian. […] I got a lot of friendships that I developed over the years, and I think just re-affirmation of my identity as a Chinese-Canadian – that being in a community that has like-minded values and beliefs and various practices that we just share and relate to". In general, participants who had experienced the Mandarin-English bilingual program expressed hopes of enrolling future offspring into the same program.

Cultural Identity Beyond Language. For some participants, their connection to a Chinese cultural heritage had occurred through methods other than language, such as cuisine or traditional holidays (MEBP-07, non-MEBP-07, and PARENT-09 interviews). This reflects the complexity of interactions between language, culture, and identity.

It should also be noted that for some young third-generation non-MEBP, their replies indicated that they had not yet given their cultural heritage much thought. For example, while he self-identified proudly as Chinese, when asked what being Chinese might mean to him, non-MEBP-15 replied that "I don't know what it means." This also serves as a reminder that journey of discovering one's identity is one that evolves throughout the lifespan, and it is not static. While a participant may feel a certain way about their identity at this point, it may change after milestones such as graduation, marriage, parenthood, or loss of loved ones. These changes may also affect the way that heritage languages are perceived.

DISCUSSION

This paper's attempt at in-depth examination of heritage language maintenance and transmission is distinguished from many other studies of language shift that tend to take a broader inspection of heritage language usage. For example, some studies use a linguistic continuity index, which seeks to track heritage language maintenance by calculating a ratio of those who speak a given language at home with those who have that given language as a heritage language (Pendakur, 1990). While informative about general trends, studies of this nature do not provide any information about the nuances of actual heritage language ability for the populations involved.

By directly assessing different facets of language proficiency, a clearer picture of heritage language transmission through the generations has emerged.

Based on both qualitative and quantitative assessment results, it appears that the Mandarin-English bilingual program has a positive effect on literacy in the heritage language for Chinese-Canadian immigrants. Both the second- and third-generation MEBP demonstrated higher capabilities of in regard to reading and writing than their non-MEBP counterparts. The benefits to oral language abilities (i.e., listening and speaking) for participants with a heritage language other than Mandarin were less clear. For example, there was no statistical difference between the MEBP and non-MEBP group in the second-generation in either the receptive oral vocabulary or speaking task. In addition, despite the statistically significant difference between the MEBP and non-MEBP in the third-generation, MEBP participants also saw the carry-over of Mandarin into the Cantonese or Taishanese oral ability, leading to language interference. As mentioned previously, the reason for this distinction between literate and oral language is likely due to the fact that all dialects of Chinese utilize the same characters in writing, but there is an enormous amount of variation in regard to spoken language, often to the point of mutual unintelligibility. Therefore, education that takes place in Mandarin is likely to have greater generalization to a heritage language of Cantonese or Taishanese for reading and writing rather than for listening or speaking.

Nevertheless, while the non-MEBP followed the Three-Generational model in terms of heritage language loss by the third-generation, the MEBP group demonstrated that does not have to be the outcome by the third-generation. Despite the lower scores and ability in the third-generation as

compared to the second-generation, the third-generation proved to be semi-speakers of their heritage language, as opposed to not having any competence in their heritage language at all.

In the process of conducting this study, many questions regarding the suitability of the assessment tasks and implications for real world language usage were raised. Some of these issues form the topics of the following sections.

Importance of Community and Multiple Contexts of Language Usage

As mentioned previously, the LEAP-Q questionnaire was used in this study to examine the language environments of the participants. It, along with the interviews, consistently revealed that family was the biggest factor for learning the heritage language, as well as the biggest context for current usage of the language. While this correlates well with the status of a heritage language as a "home language", the literature has also shown that heritage languages are best maintained and transmitted through generations when there are more opportunities and contexts for language use outside the home (Oriyama, 2012; Gollan, Starr, & Ferreira, 2015). The reasoning for this becomes evident when second- or third-generation Chinese-Canadians move out of their parents' homes and begin to live independently. If their childhood home was the only environment in which they used their heritage language, it is very likely that they will stop using the heritage language once they move outside of their family home, and language attrition will soon follow. On the other hand, if they are using their heritage language regularly with friends and in the larger community, then the language has a greater chance of survival and transmission to future generations.

However, for second- and third-generation Chinese-Canadians, the reality is that even when a group of friends are all proficient users of the heritage language, they will likely use English, the majority language of Canada, in their daily interactions with another. To be sure, some participants mentioned occasionally using their heritage language with their friends, but only for inside jokes or to express short phrases that could not be easily translated. There was no mention of casual conversations being completed in the heritage language. Even if a spouse were to share the same heritage language, it is likely that this trend of English dominant usage would continue with said spouse; this would result in English becoming the household language of the next generation's family unit. In turn, this would reduce the amount of exposure that a third-generation Chinese-Canadian would receive, as they would not be hearing the heritage language spoken at home. Indeed, this was the case for all third-generation participants, as they reported that their parents spoke English to one another. While some second-generation participants indicated that they would make an effort to speak the heritage language in front of their future children, it can be seen that this is not easy to execute in reality. This strategy for language exposure may be most effective if there is also a conversational partner within the home committed to using the same heritage language. Therefore, focusing on becoming more comfortable using the heritage language with friends, peers, and future spouse may naturally lead to heritage language exposure and provide a more well-rounded approach to heritage language acquisition for future generations.

Even more noticeable than the lack of heritage language use with friends was the dearth of heritage language use in external cultural environments. These environments could include local Chinese churches or even restaurants or businesses in Edmonton's Chinatown. When participants

were asked in what circumstances they were still using their heritage language, all but one of the responses referred to the family, but only a handful even mentioned other settings. This is suggestive of weak links to the larger Chinese cultural community, which lessens the number of opportunities that an individual would have to use the heritage language. While it has always been difficult to engage younger generations into Chinatown communities, efforts such as "Youth Collaborative for Chinatown (青心在唐人街)"in Vancouver demonstrate the power and importance of crossing the generation gap and involving second- and third-generation Chinese-Canadians (Lennon, 2016). Motivating the second- and third-generation to connect with the local Chinese community not only strengthens their cultural ties, but allows them to better practice, develop, and maintain their heritage language, often through interactions with native speakers.

The Mandarin-English bilingual program does serve to provide an additional environment for Chinese language exposure and usage, and it is a unique setting in that literacy is explicitly taught, which differs from the home or other wider community interactions. As seen in the results, this formal instruction in reading and writing has significant impact on the abilities of second- and third-generation Chinese-Canadians. Nevertheless, the program also has a natural terminus. Once students graduate from grade twelve, they no longer receive that routine contact with Chinese in their everyday lives. Unfortunately, high school graduation can also be timed with departure from the childhood home as many students relocate for university. If this occurs, individuals may lose both their contact with oral usage of the heritage language at home and contact with literacy in the heritage language from school at the same time. If removed from the heritage language for sustained amounts of time, there may be language attrition. Therefore, in order for the heritage language to be maintained, it is important to develop an assorted variety of

settings and situations for the heritage language to be used, particularly settings that extend past the traditional home environment.

Importance of Literacy

As mentioned previously, literacy is often harder to sustain than oral language (Tse, 2001), but it is a better predictor of heritage language maintenance than its oral counterpart (Kim & Pyun, 2014). Indeed, research has shown that supporting literacy in the home environment can be extremely beneficial for a heritage language (Eisenchlas, 2013). Therefore, contrary to the attitude of many first-generation participants who were satisfied with teaching their offspring to merely listen and speak in the heritage language, the importance of reading and writing cannot be overstated.

Unfortunately, due to this mindset that devalues literacy, reading and writing in the home environment are given a low priority. It was reported that formal tasks of reading and writing, beyond everyday activities such as reading menus and writing grocery lists, are rarely completed in the heritage language, even for first-generation participants and much less so for second- and third-generation participants. This may be due to the fact that English is still the dominant language of the community, regardless of Canada's multicultural attitude. For example, Chinese language books and magazines are harder to obtain than English ones, so one might become accustomed to simply reading in English. As a result, there is a negative feedback cycle, with parents neglecting to teach their offspring literacy in the heritage language because there is no need, and no need to develop reading and writing in the heritage language throughout the community because there is no one to use it.

While it was reported by some first-generation parents that they had read Chinese books to their

children when they were young, most of the second- and third-generation participants reported

that their current exposure to reading in the heritage language was minimal and ranked it

between a 1 -3 on the LEAP-Q scale (Appendix C). This may also be due to a greater preference

for reading in English. To elaborate, the LEAP-Q asked participants how often they would

choose to read a text in their heritage language if it was also available in the other languages, and

all of the participants indicated that they would choose the English version 80% of the time or

higher, with many participants choosing English 100% of the time. This suggests that reading in

the heritage language is only done out of necessity, as reading in other languages is highly

preferable. While multilinguals commonly shift between language preferences in oral and literate

usage as they age (Granados, 2015), establishing literacy in all known languages and maintaining

it can be extremely valuable.

Challenges with Assessment of Reading and Writing

While Cantonese, Taishanese, and Mandarin share an orthography by using the same characters,

the three dialects can differ in their written style. Mandarin possesses a standardized written form

in which there is a one-to-one correspondence between spoken and written words. This is the

method of writing that is traditionally taught to Chinese-speaking children for literacy, regardless

of the dialect that they might speak. On the other hand, spoken Cantonese and Taishanese are

noted to diverge from this standard writing system. In particular, there are colloquial terms and

words in spoken Cantonese that do not necessarily correlate to a standard Chinese character, and

this makes it difficult to transcribe spoken Cantonese to a written format. In Hong Kong, this has

given rise to a unique form of written Cantonese. This non-standardized system includes

developing new meanings for existing Chinese characters as well as deriving new characters

(Cheung & Bauer, 2002). Because of that, written Cantonese can be difficult to understand for

non-speakers of the dialect, even if they can read the characters.

In this study, the participants were asked to write a story based on a picture shown to them. The

participants typically chose to write in the standard "Mandarin" style. Notably, when there was

difficulty in writing a character, many participants chose to use Pinyin to represent Mandarin

pronunciations, rather than Yale romanization or any other form of representing Cantonese. This

reflects a true transition between the two dialects rather than the mere use of the standard written

form to accompany Cantonese. Indeed, when asked about this, several participants responded

that they had "learned to read and write in Mandarin", either in the Mandarin-English bilingual

program or in a weekend language class. This surpasses the aforementioned method of using the

standard variant of written Chinese regardless of spoken dialect; rather, this demonstrates usage

of Mandarin rather than Cantonese.

Due to this crossover of Mandarin and Cantonese within the task, it became more difficult to

determine the relationship between reading and writing scores with proficiency in the heritage

language. Unfortunately, the current study did not include tasks that would ascertain how the

participant would read or write in a Cantonese style, if at all. One participant even commented

that the included tasks were "very Mandarin", rather than Cantonese (MEBP-08 conversation).

As the reading tasks were taken from the HSK, a test of Mandarin ability, this is not an

unfounded observation. One solution to this issue could be to add a reading and writing task that

utilized written Cantonese, as this would provide a clearer picture of Cantonese literacy. However, because written Cantonese is not standardized, nor is it officially taught anywhere in the world, this would be a difficult task to develop. In addition, it may not be a fair expectation for Chinese-Canadian immigrants to understand this highly localized form of writing. It may be more appropriate to borrow or adapt reading and writing tasks administered to students in a Cantonese-speaking region, such as Hong Kong or Guangzhou province, and administer those as a test of Cantonese literacy. In this manner, the tasks would still assess standard Chinese writing, but would have a more Cantonese perspective than the HSK or other Mandarin-based assessments.

It is important to remember that while the Mandarin-English bilingual program appeared to have a positive effect on reading and writing scores by instructing students about the standard style of Chinese characters and grammar, it was not within the scope of the program to explore Chinese literacy in other dialects. This, taken together with the statements of the participants, suggests that the aspect of literacy which would specifically target reading and writing for a heritage language (e.g., Cantonese, Taishanese), remains largely undeveloped in many second- and third-generation participants. On other hand, the importance of developing dialect-specific literacy must also be weighed. Using written Cantonese as an example, dialectal literacy appears to be a localized and non-standardized phenomenon which may not be valuable for a Chinese-Canadian who does not intend to spend much time in that specific region. Indeed, it could be argued that learning the standard form of written Chinese is more beneficial, as it is how books, newspapers, and formal documents would be written in any Chinese-speaking region, irrespective of dialect.

Finally, there is also the matter of traditional and simplified character usage that distinguishes different subgroups of Chinese-speakers. Most of the Chinese-speaking world now uses simplified characters; nevertheless, Hong Kong, Taiwan, and Macau still use traditional characters. Currently, the Mandarin-English bilingual program uses simplified characters for instruction, with the transition between the two options being made in the mid-2000s. For the reading task, participants were offered the choice of traditional and simplified characters. The majority of participants who attempted the reading and writing tasks used traditional characters. One explanation for this preference may be familiarity with the traditional style. All of the second-generation participants who had attended the Mandarin-English bilingual program were students during the transitional period from traditional to simplified characters, and they may feel more comfortable with the former method. Another possible explanation for this preference is that there were many participants who had family roots in Hong Kong, so they may have had more exposure to traditional characters than simplified characters in their personal lives. While preference for one form or another does not directly impact literacy, it is still interesting to note as it can provide insight regarding language exposure and even language loyalty of the participants.

Adding more basic levels to the writing task would also allow for more information to be gathered about writing ability for those who declined the task. For instance, when presented with the task of composing a whole story, some participants may have been intimidated and reported an inability to write, when in reality, they may have been able to print a few characters or simple sentences. By investigating simpler skills such as printing of individual characters or writing short sentences, it could put more participants at ease for attempting such tasks, since it is more

achievable than writing a complete narrative. This could help determine if there is a more basic level of knowledge of written language, even if participants feel unable to produce a complete narrative.

Challenges with Assessment of Oral Receptive Language

As mentioned in the Literature Review, one challenge of assessing heritage languages is the difficulty in finding appropriate standardized tests to use (Carter *et al.*, 2005). Based on the methods used by Bialystok and colleagues in their 2005 paper, this study chose to use a translated version of the PPVT-IV. However, this approach had several flaws, which are detailed below.

Firstly, the English PPVT-IV is designed to assess receptive language by using increasingly complex vocabulary, but this progression is not necessarily maintained in the Chinese translations. This is due in part to the challenge in finding a direct translation for the more complicated words. For example, the English word "nidificating" does not have an equivalent Chinese word or phrase that carries a similar level of vocabulary difficulty. As a result, when the translators had to generate a translation for these obscure words, they often prioritized preserving the meaning of the English word rather than preserving the complexity of the word. For the word "nidificating", the team of translators settled on "築巢", which literally means "nest building", but does not pose the same semantic challenge as the original English word.

Secondly, the Chinese language often requires the combination of multiple characters to convey the same meaning as a single word in English. Because each individual character typically

provides clues and context for the meaning of the entire phrase, the translated Chinese PPVT-IV is more transparent than its English counterpart. Indeed, in some cases, it is possible to derive the meaning from the individual characters even if the listener is unfamiliar with the phrase as a whole. For example, a participant who only possesses conversational Cantonese may not know the phrase "大火災", which was used as a translation for "conflagration". However, the participant may know that respectively, "大" means "big", "火" means "fire", and "災" means "disaster", and could use these individual translations to determine provide a fairly accurate approximation of the phrase as a whole. This sets the Chinese translation apart from English, as the English requires knowledge of the word as a whole and mere understanding of lesser components would be insufficient.

Thirdly, the translated Chinese versions of the PPVT-IV do not possess the same phonological distractors as the original English version, meaning that a participant would have a higher likelihood of deducing the correct choice from the set of pictures. When the aforementioned nature of Chinese to use multiple characters to convey meaning is also taken into account, it becomes possible for participants to make an educated guess and determine the correct picture with nothing more than the knowledge of a single character out of the multiple words in the Chinese phrase. For instance, a participant could hear the phrase "豆荚" for the word "pods" and understand that "豆" means beans. Given that the pictures are green beans, a yam, an asparagus, and a gourd, the logical guess is the picture of the beans. Without the presence of phonological distractors, the participant can guess the correct choice without necessarily understanding the phrase as a whole. This is unlike the English PPVT-IV, which probes for more complete understanding by including the semantic and phonological distractors into the choices.

With these factors in mind, the scores obtained by the participants on the Chinese PPVT-4 must be interpreted carefully. It is possible that some scores have been inflated due to simpler word choices, strategic understanding, intelligent guesses, chance, or a combination of all of the above. This may explain why some participants achieved a higher raw score in their heritage language than their raw score for the English PPVT-4, despite their self-reports that they are more proficient in English. However, it is worth noting that people often use a variety of strategies and contextual clues to supplement understanding, so any exaggerated scores may also reflect how an individual might function in a real conversation or task.

Other Effects of the Mandarin-English Bilingual Program

Apart from language learning, several participants who attended the Mandarin-English bilingual program also reported that there were other impacts on their personal lives. As proximity is an important factor in developing friendships (Ting-Toomey, 1980), one effect of the Mandarin-English bilingual program was the inadvertent development of social circles that were comprised primarily of ethnically homogenous classmates. One participant even reported that forming friendships with other Chinese-Canadian youth "kind of protected us from […] discrimination or racism until we became aware of that at later ages" (MEBP-05 interview). In that vein, having homogenous friend circles was likely to have bolstered self-identification with the Chinese culture, and may have increased the likelihood of heritage language usage between peers due to shared understanding.

Another benefit of the Mandarin-English bilingual program was the exposure to cultural traditions and values. Many participants appreciated the chance to celebrate important holidays,

such as Mid-Autumn Festival and Chinese New Year, as it allowed them to explore their own heritage culture on a deeper level. Attendees also valued the opportunity for exchange trips to China. Indeed, for one participant, these opportunities for cultural exposure were the most valuable part of the program, even more so than the actual language learning (MEBP-14 interview). Clearly, these occasions for cultural exploration were an important part of the Mandarin-English bilingual program.

As a result, it is difficult to isolate the impact of the Mandarin-English bilingual program as it does not teach the language in isolation, nor should it. A good language program acknowledges the accompanying cultural heritage, as this allows for a deeper connection to the language and a better understanding of the culture and language as a whole. Each language carries connotations and deeper meanings that cannot be understood without the context of the culture, and Chinese is no different. In order to have a true grasp of the heritage language, one must also understand the culture behind it.

CONCLUSION

In order for a language to survive and thrive, it needs to be used regularly and in a variety of contexts. While the Mandarin-English bilingual program does provide a forum for language learning and usage, it does not necessarily translate to other dialects of Chinese such as Cantonese or Taishanese. In fact, the most noticeable benefits of the Mandarin-English bilingual program were in regard to Chinese literacy, but these gains appeared limited to the standard Mandarin style, with no direct benefit for dialectal literacy. The positive impact of the Mandarin-English bilingual program for heritage language learning was also most prominent for the third-

generation of Chinese-Canadian immigrants. All third-generation participants who did not attend the Mandarin-English program were unable to complete any of the assessment tasks in the heritage language, while those who did attend the program were able to attempt the tasks, albeit with occasional crossover of Mandarin into the heritage language. This suggests that Mandarin-English bilingual program may substitute for the home environment in regard to providing Chinese language exposure when the home environment no longer uses the heritage language. This added environment helps to maintain the usage of the heritage language in later generations.

It is regrettable that heritage languages are often relegated for usage in the home or only with older family members, as heritage languages are shown to have greater chances of maintenance and transmission to later generations when they are used in a wide variety of contexts. Encouraging second- and third-generation Chinese-Canadians to use their heritage language outside of the home or school environment, such as in conversations with friends, at local supermarkets or restaurants, or for entertainment, may be critical for the language to endure. In addition, encouraging involvement in the Chinese community may also have benefits beyond language maintenance, such as helping to bolster one's cultural identity. The interplay between culture, language, and identity is strong, with each affecting and experiencing the effects of the others in turn. Strengthening one component certainly has benefits on the others.

This interaction between different factors on heritage language maintenance and transmission has been prevalent throughout this study. Although the original purpose of this paper was to examine the impact of the Mandarin-English bilingual program, it was also crucial to consider other factors such as the English language proficiency of the parents, the degree of an

individual's self-identification as Chinese, the value placed on a heritage language, as well as many other concepts. While each and every participant responded that they consider a heritage language to be important, the approach of each individual toward preservation of that language differed greatly.

There are many directions for future research, including examining the longevity of the effects of the Mandarin-English bilingual program. Many of the participants were of university age, several years removed from their participation in the Mandarin-English bilingual program, and they reported feeling as if they had forgotten much of what they once knew. This was most pronounced during the reading and writing tasks, with one participant even joking that "I don't remember Chinese anymore" (MEBP-02 interview) in reference to his attempts to write a story. Part of this may be due to the nature of Chinese orthography, as each character must be learned and memorized with no compensatory technique for phonetic spelling, such as in English, French, or Spanish. This makes higher level vocabulary more vulnerable to being forgotten, as it is rarely used but must be retained as a unit including its meaning, pronunciation, and written form. Some of these aspects are more difficult to maintain than others. For instance, during the writing task, several participants indicated that they knew how a character sounded and that they would recognize the character if they saw it, but they were unable to write it themselves. This indicates incomplete knowledge of the character and may be a sign of early language attrition. However, it is also interesting to note that technology could largely circumvent that problem, as many Chinese input methods rely on phonetic transcription systems, such as PinYin, for typing Chinese. With technology, the individual would only have to know the sound of the character, and recognize it from a selection of characters, which participants reported being able to do. It

would be interesting to reassess writing with technology as an aid to observe any changes between physical printing and typing of a story, and to also observe the differences as time progresses. It may be that a student who just completed grade twelve may not be as reliant on technology as someone who completed the program ten years ago. As mentioned previously, literacy is often one of the first aspects of language to fade while oral language remains relatively preserved due to the usage frequency of each mode of communication (Tse, 2001). This makes the longevity of literacy an interesting area for future study.

This study could also be expanded by delving deeper in to the family unit. While attempts were made to collect data in family units to track transmission, there were no three-generation families recruited for this study to show the true transition from generation to generation. In addition, it may be informative to study siblings within a family, to see if the first-born effect truly plays a role in heritage language proficiency. Either direction would help to enrich the current knowledge of language transmission and intergenerational language use.

A third area for future research could be to examine the motivation of second- and third-generation Chinese-Canadians regarding heritage language acquisition, and to correlate it with heritage language ability. The literature indicates that a heritage language is more successfully acquired when there are high levels of self-determination, (Comanaru, 2009), but all participants indicated that beginning the Mandarin-English bilingual program was a parental decision. In part, this is likely due to the young start age of the program at five years old, but it would be fascinating to see if older participants of the program view it as a personal choice or not. This was lightly touched upon in this study, as participants were asked who made the decision to

continue in the program in junior high and high school, with many participants responding that they simply continued on the path that they had been set. Further investigation would certainly be warranted.

Heritage language maintenance has shown itself to be a wide and diverse field, but it is interesting to see the common themes of family, culture, and identity repeating throughout the literature. As PARENT-05 explained in her interview, "language is one of those things that you can be sustained in the root that you are Chinese," but it is important to remember that it is not the only factor. As generations pass, it is interesting to see how varied the identity of being Chinese-Canadian can be, with some choosing to "[connect] with our culture in ways other than the language" (non-MEBP-12 interview), and others making active decisions to transmit their heritage language to their offspring.

BIBLIOGRAPHY

Alba, R., Logan, J., Lutz, A., & Stults, B. (2002). Only English by the third generation? Loss and preservation of the mother tongue among the grandchildren of contemporary immigrants. *Demography*, *39*(3), 467 – 484.

Arriagada, P.A. (2005). Family context and Spanish-language use: A study of Latino children in the United States. *Social Science Quarterly*, *86*(3), 599 – 619.

Bialystok, E., McBride-Chang, C., & Luk, G. (2005). Bilingualism, language proficiency, and learning to read in two writing systems. *Journal of Educational Psychology*, *97*(4), 580 – 590.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77 – 101.

Brown, C.L. (2011). Maintaining heritage language: Perspectives of Korean parents. *Multicultural Education*, *19*(1), 31 – 37.

Bylund, E., & Diaz, M. (2012). The effects of heritage language instruction on proficiency: A psycholinguistic perspective. *International Journal of Bilingual Education and Bilingualism*, *15*(5), 593 – 609.

Canadian Education Association. (1991). *Heritage language programs in Canadian school boards*. Toronto, ON.

Carter, J.A., Lees, J.A., Murira, G.M., Goria, J., Neville, B.G.R., & Newton, C.R.J.C. (2005). Issues in the development of cross-cultural assessments of speech and language for children. *International Journal of Language and Communication Disorders*, *40*(4), 385 – 401.

Cheung, B.Y., Chudek, M., & Heine, S.J. (2011). Evidence for a sensitive period for acculturation: Younger immigrants report acculturating at a faster rate. *Psychological Science*, *22*(2), 147 – 152.

Cheung, K.H., Bauer, R.S. (2002). The representation of Cantonese with Chinese characters. *Journal of Chinese Linguistics Monograph Series*, *18*(1), 1 – 489.

Cheung, P.S.P., Lee, K.Y.S., & Lee, L.W.T. (1997). The development of the 'Cantonese Receptive Vocabulary Test' for children aged 2 – 6 in Hong Kong. *European Journal of Disorders of Communication*, *32*, 127 – 138.

China Education Center. (n.d.). Important HSK test practice materials. Retrieved April 15, 2017, from http://www.chinaeducenter.com/en/hsk/hskmaterials.php

Cho, G. (2000). The role of heritage language in social interactions and relationships: Reflections from a language minority group. *Bilingual Research Journal*, *24*(4), 369 – 384.

Cho, G. (2015). Perspectives vs. reality of heritage language development: Voices from second-generation Korean-American high school students. *Multicultural Education*, *22*(2), 30 – 38.

City of Edmonton. (2016). *2016 Summary of results*. Retrieved from https://www.edmonton.ca/city_government/documents/census/Summary%20Report%20of%20All%20Questions_EDMONTON_2016.pdf

Comanaru, R., & Noels, K.A. (2009). Self-determination, motivation, and the learning of Chinese as a heritage language. *The Canadian Modern Language Review / La Revue Canadienne des langues vivantes*, *66*(1), 131 – 158.

Creswell, J.W. & Plano Clark, V.L. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.

DeFrancis, J. (1984). *The Chinese language: Fact and fantasy.* Honolulu, HI: University of Hawaii Press.

Duff, P.C. (2008). Heritage language education in Canada. In D. Brinton, O. Kagan & S. Bauckus (Eds.), *Heritage language education: A new field emerging* (pp. 71 – 90). New York, NY: Routledge.

Dunn, L.M., & Dunn, D.M. (2007). *The Peabody Picture Vocabulary Test*. United States: Pearson Education.

Edmonton Chinese Bilingual Education Association (ECBEA). (n.d.). Home page. Retrieved April 15, 2017, from http://www.ecbea.org/

Edmonton Public School Board (EPSB). (n.d.) Chinese (Mandarin) Bilingual. Retrieved April 15, 2017, from http://www.epsb.ca/programs/language/chinesemandarinbilingual

Eisenchlas, S.A., Schalley, A.C., & Guillemin, D. (2013). The importance of literacy in the home language: The view from Australia. *SAGE Open*, *3*(4), 1 – 14.

Fishman, J. (1966). *Language loyalty in the United States*. The Hague: Mouton de Gruyter.

Geerlings, J., Verkuyten, M., & Thijs, J. (2015). Changes in ethnic self-identification and heritage language preference in adolescence: A cross-legged panel study. *Journal of Language and Social Psychology*, *34*(5), 501 – 520.

Gillam, R.B., & Pearson, N.A. (2017). *Test of Narrative Language – Second Edition*. United States: PRO-ED.

Gkaintartzi, A., Kiliari, A., & Tsokalidou, R. (2016). Heritage language maintenance and education in the Greek sociolinguistic context: Albanian immigrant parents' view. *Cogent Education*, *3*(1), 1 – 17.

Gollan, T.H., Starr, J., & Ferreira, V.S. (2015). More than use it or lose it: The number-of-speakers effect on heritage language proficiency. *Psychonomic Bulletin and Review*, *22*(1), 147 – 155.

Granados, N.R. (2015). Dual language graduates' participation in bilingual and biliterate communities of practice across time and space. *Bilingual Research Journal*, *38*(1), 45 – 64.

Hammill, D.D., & Larsen, S.C. (2009) *Test of Written Language – Fourth Edition*. United States: Pearson.

Hanban / Confucius Institute Headquarters. (n.d.). "Chinese Proficiency Test (HSK)". *考试介绍--汉语考试服务网*. Retrieved April 15, 2017 from http://chinesetest.cn/

Ho, E.L.E. (2013). The contradictory nature of multiculturalism: Mainland Chinese immigrants' perspectives and their onward emigration from Canada. In E. Fong, L.N. Chiang, & N. Denton (Eds.), *Immigrant adaptation in multi-ethnic societies: Canada, Taiwan, and the United States* (pp. 159 – 169). New York, NY: Routledge.

Ho,J. (2011). Cultural heritage language in third generation Chinese-Americans (Honours thesis). Retrieved from http://linguistics.ucdavis.edu/pics-and-pdfs/Honors%20Thesis%20Jennifer%20Ho.pdf

Honig, A.S., & Xu, Y. (2012). Chinese immigrant families and bilingualism among young children. *National Head Start Association Dialog*, *15*(4), 303 – 318.

Hornberger, N.H., & Wang, S.C. (2008). Who are our heritage language learners? Identity and biliteracy in heritage language education in the United States. In D.M. Brinton, O.Kagan, & S. Bauckus (Eds.), *Heritage language education: A new field emerging* (pp. 3 – 37). New York, NY: Routledge.

Hsieh, H.F., & Shannon, S.E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*(9), 1217 – 1288.

Ishizawa, H. (2004). Minority language use among grandchildren in multigenerational homes. *Sociological Perspectives*, *47*(4), 465 – 483.

Jia, R., & Paradis, J. (2015). The use of referring expressions in narratives by Mandarin heritage language children and the role of language environment factors in predicting individual differences. *Bilingualism: Learning and Cognition*, *18*(4), 737 – 752.

Kim, C.E., & Pyun, D.O. (2014). Heritage language literacy maintenance: A study of Korean-American heritage learners. *Language, Culture, and Curriculum*, *27*(3), 294 – 315.

Kim,S.K.L. (1992). Cultural identity: A case study of the Chinese heritage language school in Calgary. (Dissertation). Retrieved from ProQuest Dissertations & Theses Global.

Klee, T., Wong, A.H.Y., Stokes, S.F., Fletcher, P., & Leonard, L.B. (2009). Assessing Cantonese-speaking children with language difficulties from the perspective of evidence-based practice: Current and future directions. In S.P. Law, B.S. Weekes, & A.M.Y. Wong (Eds.), *Language disorders in speakers of Chinese* (pp. 89 – 111). Bristol, UK: Multilingual Matters.

Kuo, E.C.Y. (1974). Bilingual pattern of a Chinese immigrant group in the United States. *Anthropological Linguistics*, *16*(3), 128 – 140.

Kurpaska, M. (2010). *Chinese language(s): A look through the prism of The Great Dictionary of Modern Chinese Dialects*. Berlin: De Gruyter Mouton.

Lalonde, R.N., & Uskul, A.K. (2013). Openness to inter-ethnic relationships for Chinese and South-Asian Canadians: The role of Canadian identity. In E. Fong, L.H.N. Chiang, & N. Denton (Eds.), *Immigrant adaptation in multi-ethnic societies: Canada, Taiwan, and the United States* (pp. 138 – 158). New York, NY: Routledge.

Lao, C. (2004). Parents' attitudes toward Chinese-English bilingual education and Chinese-language use. *Bilingual Research Journal*, *28*(1), 99 – 121.

Lai, C.Y.D. (1975). Home county and clan origins of overseas Chinese in Canada in the early 1880s. *BC Studies*, *27*(1), 3 – 29.

Lee, B.Y. (2013). Heritage language maintenance and cultural identity formation: The case of Korean immigrant parents and their children in the USA. *Early Child Development and Care*, *183*(11), 1576 – 1588.

Lennon, K.G.Y. (2016). Young hearts in Chinatown 青心在唐人街: Activating public spaces in Vancouver's Chinatown. (M.Sc Project). Retrieved from UBC Open Collections Graduate Research.

Linton, A. (2004). A critical mass model of bilingualism among U.S.-born Hispanics. *Social Forces*, *83*(1), 279 – 314.

Liu, E. (1998). *The accidental Asian: Notes of a native speaker*. New York, NY: Random House Press.

Lu, L. & Liu, H.S. (1998). *The Peabody Picture Vocabulary Test – revised in Chinese*. Taipei: Psychological Publishing.

Luo¸ S.H., & Wiseman, R.L. (2000). Ethnic language maintenance among Chinese immigrant children in the United States. *International Journal of Intercultural Relations*, *24*(3), 307 – 324.

Marian, V., Blumenfeld, H.K., & Kaushanskaya, M. (2007). The Language Experience and Proficiency Questionnaire (LEAP-Q): assessing language profiles in bilinguals and multilinguals. *Journal of Speech, Language, and Hearing Research*, *50*(4), 940 – 967.

Melo-Pfeifer, S. (2015). The role of the family in heritage language use and learning: impact on heritage language policies. *International Journal of Bilingual Education and Bilingualism*, *18*(1), 26 – 44.

Mu, G. M., & Dooley, K. (2015). Coming into an inheritance: family support and Chinese heritage language learning. *International Journal of Bilingual Education and Bilingualism*, *18*(4), 501 – 515.

Muir, V.H. (1991). What is a Chinese "dialect/topolect"? Reflections on some key Sino-English linguistic terms. *Sino-Platonic Papers*, *29*(1), 1 – 31.

Nastasi, B.K., Hitchcock, J.H., & Brown, L.M. (2010). An inclusive framework for conceptualizing mixed methods design typologies: Moving toward fully integrated synergistic research models. In A. Tashakkori & C. Teddlie (Eds.), *SAGE handbook of mixed methods in social and behavioral research* (pp. 305 – 338). Thousand Oaks, CA: SAGE Publications, Inc.

NVivo [Computer software]. (2018). Retrieved from https://www.qsrinternational.com/nvivo/nvivo-products

Oriyama, K. (2012). What role can community contact play in heritage language literacy development? Japanese-English bilingual children in Sydney. *Journal of Multilingual and Multicultural Development*, *33*(2), 167 – 186.

Paciotto, C. (2014). A case study of a minority language maintenance program in Italy: Students' and teachers' perspectives on the Slovene-medium school network. *Procedia – Social and Behavioural Sciences*, *116*(1), 1237 – 1242.

Park, S.M., & Sarkar, M. (2007). Parents' attitudes toward heritage language maintenance for their children and their efforts to help their children maintain the heritage language: a case study of Korean-Canadian immigrants. *Language, Culture, and Curriculum*, *20*(3), 223 – 235.

Pendakur, R. (1990). *Speaking in tongues: Heritage language maintenance and transfer in Canada*. (ED339214) Ottawa, ON: Department of the Secretary of State.

Phinney, J.S. (1989). Stages of ethnic identity development in minority group adolescents. *The Journal of Early Adolescence*, *9*(1), 34 – 49.

Pigott, B.S., & Kalbach, M.A. (2005). Language effects on ethnic identity in Canada. *Canadian Ethnic Studies*, *37*(2), 3 – 18.

Portes, A., & Hao, L. (1998). *E pluribus unum*: bilingualism and loss of language in the second generation. *Sociology of Education*, *71*(4), 269 – 294.

Rumbaut, R.G. (2004). Ages, life stages, and generational cohorts: decomposing the immigrant first and second generations in the United States. *The International Migration Review*, *38*(3), 1160 – 1205.

Rumbaut, R.G., Massey, D.S., & Bean, F.D. (2006). Linguistic life expectancies: Immigrant language retention in southern California. *Population and Development Review*, *32*(3), 447 – 460.

Seals, C.A., & Peyton, J.K. (2017) Heritage language education: valuing the languages, literacies, and cultural competencies of immigrant youth. *Current Issues in Language Planning*, *18*(1), 87 – 101.

Siordia, C., & Diaz, M.E. (2012). Language shift in the United States and foreign born older Mexian heritage individuals: co-ethnic context for language resistance. *Hispanic Journal of Behavioural Sciences*, *34*(4), 525 – 538.

Statistics Canada (2011). *Generation status: Canadian-born children of immigrants* (Catalogue No. 99-010-X2011003). Ottawa, ON: Government of Canada.

Statistics Canada. (2013). *Immigration and ethnocultural diversity in Canada* (Catalogue No. 99-010-X). Ottawa, ON: Government of Canada.

Suarez, D. (2007). Second and third generation heritage language speakers: HL scholarship relevance to the research needs and future directions of TESOL. *Heritage Language Journal*, *5*(1), 27 – 49.

Szilágyi, J., Giambo, D., & Szecsi, T. (2013). Teaching strategies: "What if I don't speak it?" Classroom strategies to nurture students' heritage language. *Childhood Education*, *89*(2), 117 – 121.

Templin, T., Seidl, A., Wickström, B.A., & Feichtinger, G. (2016). Optimal language policy for the preservation of a minority language. *Mathematical Social Sciences*, *81*, 8 – 21.

Ting-Toomey, S. (1980). Ethnic identity and close friendship in Chinese-American college students. *International Journal of Intercultural Relations*, *5*(1), 383 – 406.

Tse, L. (2001). Resisting and reversing language shift: heritage-language resilience among U.S. native biliterates. *Harvard Educational Review*, *71*(4), 676 – 708.

United States Bureau of the Census. (1995). Celebrating our nation's diversity: a teaching supplement for grades K – 12. *U.S. Department of Commerce, Economics and Statistics Administration.*

Valdés, G. (2005). Bilingualism, heritage language learners, and SLA research: opportunities lost or seized? *The Modern Language Journal*, *89*(3), 410 – 426.

Valdés, G. (2017). From language maintenance and intergenerational transmission to language survivance: will "heritage language" education help or hinder? *International Journal of the Sociology of Language*, *2017*(243), 67 – 95.

Veltman, C. (1983). *Language shift in the United States*. Berlin: Mouton de Gruyter.

Wiley, T.G. (2001). Policy formation and implementation. In J.K. Peyton, D.A. Ranard, & S. McGinnis (Eds.), *Heritage languages in America: Preserving a national resource* (pp. 99 – 108). McHenry: IL: Center for Applied Linguistics.

Wong, K.F., & Xiao, Y. (2010). Diversity and difference: Identity issues of Chinese heritage language learners from dialect backgrounds. *Heritage Language Journal*, *7*(2), 152 – 185.

Wong-Fillmore, L. (2000). Loss of family languages: should educators be concerned? *Theory into Practice*, *39*(4), 203 – 210.

Wu, J.Z. (2005). Bilingual education in western Canada and Chinese language minority students' self-perceptions of their citizenship and ethnicity. *Canadian and International Education*, *34*(1), 23 – 30.

Xiao, Y. (2008). Home literacy environment in CHL development. In A.W. He, & Y. Xiao. *Chinese as a heritage language: Fostering rooted world citizenry* (pp. 151 – 166). Honolulu, HI: University of Hawaii Press.

Zhang, D. (2010). Language maintenance and language shift among Chinese immigrant parents and their second-generation children in the U.S..*Bilingual Research Journal*, *33*(1), 42 – 60.

APPENDIX A: Reading Comprehension Sample

Level One

狗

A) B) C)

Level Two

火车站在哪儿？

A) B) C)
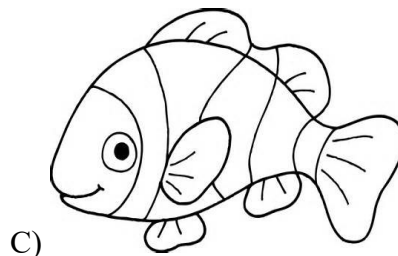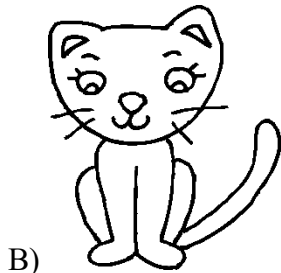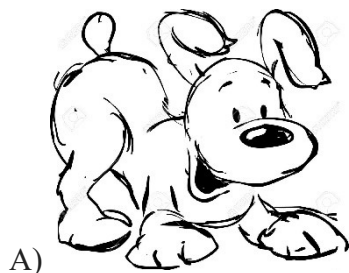
Level Three

现在越来越多的人喜欢拿出手机看时间，我还是觉得用手表更方便。
★根据这段话，他更愿意：
A) 打电话　　　　　　B) 用手机上网　　　　C) 用手表看时间

Level Four

各位乘客，大家好，感谢大家乘坐此次航班，我们的飞机将于20分钟后降落
在北京首都国际机场。
★飞机：
A）晚点了　　　　B）要降落了　　　C）由北京出发　　D）刚起飞不久

Level Five

宣纸是一种主要用于中国传统书画创作的纸张。它的寿命可达1000年，而普通纸大约在两三百年后就会因自然老化而破损，新闻纸的寿命则更短，五六十年后就会变黄、发脆。所以，宣纸算是纸中的"老寿星"了。

A) 宣纸的寿命很长   B) 新闻纸是最高档的纸

C) 宣纸多用于广告宣传   D) 一般的纸都能保存五六百年

Level Six

"东道主"一词出自《左传》。晋文公早年被人陷害而在外流亡19年，最后在秦国的帮助下，返回晋国当上了国君。在他流亡期间，曾途经郑国，但郑国国君郑文公并没有对他施以援手，晋郑两国由此结下了仇怨。后来晋国联合秦国一起攻打郑国。郑文公派出老臣烛之武出使秦国，试图化解危机。

擅长游说的烛之武见到秦穆公，并没有卑躬屈膝，而是言辞中肯地说道："郑国和秦国相距很远，中间还隔着晋国。郑国灭亡，只会增加晋国的实力，对秦国来说一点儿好处也没有。假如您放弃消灭郑国的计划，把郑国当做东方道路上的主人，秦国使者途经郑国时，郑国加以款待，这样不是很好吗？"

秦穆公一听，觉得有理，便采纳了烛之武的建议，不但撤了兵，还留下一些士兵帮助郑国守卫城池。秦军一撤，晋文公势单力薄，也只好撤军了。

烛之武原话里有"东道主"这个词，郑国也因此成了最早的"东道主"。

中国古代很讲究方位的排列。五行学说中，东和西相比较，以东为上。在一些宴会上，主人通常坐在东面，因而东道主又有了主人的意思。

现在，东道主一般泛指接待或宴请的主人。另外，一些活动的主办方也被称为东道主。

晋郑两国为何会结下仇怨？

A）晋国阻拦郑国扩张   B）晋国侵占了郑国土地

C）郑文公曾陷害晋文公   D）郑国未帮助流亡的晋文公

APPENDIX B: Scoring Rubric for Written Language

<u>SCORING RUBRIC – **Written Story** – **GRAMMAR + CONVENTIONS**</u>

Paragraphs (clearly indicates paragraphs with indentations or spaces between)
- 0   none or one
- 1   two paragraphs
- 2   three to four paragraphs
- 3   five or more paragraphs

Uses quotation marks (must have both opening and closing quotation marks)
- 0   no
- 1   yes

Uses colons to set off a direct quotation
- 0   no
- 1   yes

Uses a question mark (need not be used correctly)
- 0   no
- 1   yes

Uses an exclamation mark (need not be used correctly)
- 0   no
- 1   yes

Number of nonduplicated misprinted words
- 0   six or more
- 1   three to five
- 2   zero to two

Fragmentary sentence (usually a sentence without both a subject and a verb)
- 0   yes
- 1   no

Run-on / rambling sentence
- 0   yes
- 1   no

Compound sentence (two complete sentences connected by a conjunction, colon, or semicolon)
- 0   none
- 1   one

2   two to three
3   four or more

Uses coordinating conjunctions other than 和 when forming compound sentences (count each conjunction only once)
0   no
1   one to two
2   three or more

Introductory phrases and clauses (two or more words introducing a sentence)
0   none
1   one to two
2   three to five
3   more than six

Sentences in paragraph(s)
0   one paragraph, one sentence
1   one paragraph, two or more sentences
2   two ore more paragraphs, two or more sentences in at least one paragraph
3   two ore more paragraphs, two or more sentences in at least two paragraphs

Sentence composition
0   many badly constructed sentences
1   mostly simple sentences with some introductory and concluding phrases
2   a variety of well-constructed compound and complex sentences

Uses measure words appropriately
0   only uses 個 / 个
1   uses a specific measure word appropriately once
2   uses specific measure words appropriately more than once

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SCORING RUBRIC – Written Story – CONTENT + COMPOSITION

Story beginning
- 0 abrupt, weak
- 1 serviceable, somewhat interesting
- 2 grabbing, exceptionally engaging

Definitely refers to a specific event occurring before or after the picture
- 0 no
- 1 yes

Story sequence
- 0 a series of random, disjointed, or rambling statements
- 1 has some sequence
- 2 moves smoothly and coherently from start to finish

Plot (storyline)
- 0 uninteresting, dull, flat
- 1 interesting, logical, acceptable
- 2 intriguing, well-crafted

Characters show feelings / emotion
- 0 no
- 1 some mild or subtle emotion (upset, smiling, laughing, excited, happy)
- 2 strong emotion evident in at least one character (anger, love, terror, ecstasy)

Story action or energy level (pace)
- 0 plodding, stumbling, none
- 1 interesting, sustained
- 2 exciting, compelling, exceptional

Story ending
- 0 abrupt, weak
- 1 logical, definite ending
- 2 clever, inventive

Writing style is
- 0 immature, dull, undistinguished
- 1 serviceable, matter-of-fact
- 2 artful, stylish, exceptional

Story is
- 0 immature, merely describes picture
- 1 straightforward, coherent, interesting

2   engaging, unique, grabbing

Story vocabulary (out of the following fourteen boxes)

0   zero to three
1   four to seven
2   eight or more

tree fire flames burning	people man men neighbours	house houses window	grass yard backyard	dog leash cat	fence sidewalk hydrant	rain rainstorm storm
birdcage bird	cloud storm cloud	boy girl	car(s) auto(s)	cell phone woman	hose water hose	lightning

Overall vocabulary used in story

0   sparse, immature
1   serviceable, adequate, competent
2   rich, mature, figurative

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APPENDIX C: LEAP-Q

Northwestern Bilingualism & Psycholinguistics Research Laboratory Marian, Blumenfeld, & Kaushanskaya (2007). The Language Experience and Proficiency Questionnaire (LEAP-Q): Assessing language profiles in bilinguals and multilinguals. *Journal of Speech Language and Hearing Research*, *50* (4), 940-967.

Language Experience and Proficiency Questionnaire LEAP-Q), Version for Canada

#:_____   Date:_____
Age :_____   Date of Birth:_____   M / F

(1) Please list all the languages you know **in order of dominance**:

1.	2.	3.	4.	5.

(2) Please list all the languages you know **in order of acquisition** (your native language first):

1.	2.	3.	4.	5.

(3) Please list what percentage of the time you are *currently* and *on average* exposed to each language. (*Your percentages should add up to 100%*):

Language:					
Percentage:					

(4) When choosing to read a text available in all your languages, in what percentage of cases would you choose to read it in each of your languages? Assume that the original was written in another language, which is unknown to you. (*Your percentages should add up to 100%*):

Language:					
Percentage:					

(5) When choosing a language to speak with a person who is equally fluent in all your languages, what percentage of the time would you choose to speak each language? Please report percent of total time. (*Your percentages should add up to 100%*):

Language:					
Percentage:					

(6) Please name the cultures with which you identify. On a scale from zero to ten, please rate the extent to which you identify with each culture. (Examples of possible cultures include US-American, Chinese, Jewish-Orthodox, etc.)

Culture: _____

```
  0         1         2         3         4         5         6         7         8         9         10
 No                                                 Moderate                                      Complete
 identification |                                   identification                                identification
            Very low
            identification
```

Culture: _____

```
  0         1         2         3         4         5         6         7         8         9         10
 No                                                 Moderate                                      Complete
 identification |                                   identification                                identification
            Very low
            identification
```

Culture: _____

```
  0         1         2         3         4         5         6         7         8         9         10
 No                                                 Moderate                                      Complete
 identification |                                   identification                                identification
            Very low
            identification
```

Culture: _____

```
  0         1         2         3         4         5         6         7         8         9         10
 No                                                 Moderate                                      Complete
 identification |                                   identification                                identification
            Very low
            identification
```
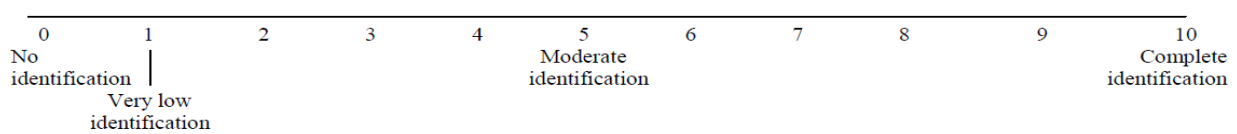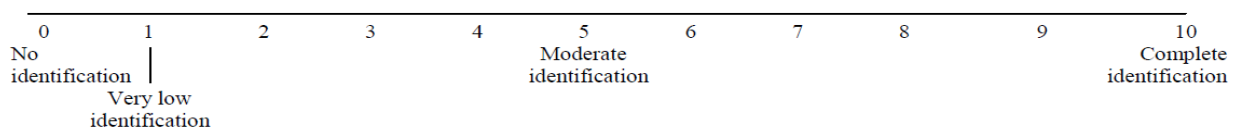
(7) How many years of formal education do you have? _____
Please check your highest education level (or the approximate equivalent to a degree obtained in another country)

☐ Less than high school   ☐ College / CEGEP   ☐ Masters
☐ High school   ☐ Some university   ☐ Ph.D. / M.D. / J.D.
☐ Professional training   ☐ University   ☐ Other:
☐ Some college / CEGEP   ☐ Some graduate school

(8) Date of immigration to Canada, if applicable_____
If you have ever immigrated to another country, please provide name of country and date of immigration here.
_____

(9) Have you ever had: ☐a vision problem, ☐hearing impairment, ☐a language disability, or ☐a learning disability? (Check all applicable)

If yes, please explain (including any corrections): _____

_____

LANGUAGE: This is my (**native   second   third   fourth   fifth**) language

(1) Age when you…

began acquiring this language:	*became fluent in this language:*	*began reading in this language:*	*became fluent reading in this language:*

(2) Please list the number of years and months you spent in each language environment

	Years	Months
A country where this language is spoken		
A family where this language is spoken		
A school and/or working environment where this language is spoken		

(3) Please circle your *level of **proficiency*** in speaking, understanding and reading this language

0	1	2	3	4	5	6	7	8	9	10
None	Very low	Low	Fair	Slightly less than adequate	Adequate	Slightly more than adequate	Good	Very good	Excellent	Perfect

Speaking	0	1	2	3	4	5	6	7	8	9	10
Understanding spoken language	0	1	2	3	4	5	6	7	8	9	10
Reading	0	1	2	3	4	5	6	7	8	9	10

(4) Please circle how much the following factors contributed to you learning this language:

0	1	2	3	4	5	6	7	8	9	10
Not a contributor	Minimal contributor				Moderate contributor					Most important contributor

Interacting with friends	0	1	2	3	4	5	6	7	8	9	10
Interacting with family	0	1	2	3	4	5	6	7	8	9	10
Reading	0	1	2	3	4	5	6	7	8	9	10
Language tapes / self-instruction	0	1	2	3	4	5	6	7	8	9	10
TV	0	1	2	3	4	5	6	7	8	9	10

Music listening	0	1	2	3	4	5	6	7	8	9	10
Language classes	0	1	2	3	4	5	6	7	8	9	10

(5) Please circle to what extent you are currently exposed to this language in the following contexts:

0	1	2	3	4	5	6	7	8	9	10
Never	Almost Never				Half of the time					Always

Interacting with friends	0	1	2	3	4	5	6	7	8	9	10
Interacting with family	0	1	2	3	4	5	6	7	8	9	10
TV	0	1	2	3	4	5	6	7	8	9	10
Music listening	0	1	2	3	4	5	6	7	8	9	10
Reading	0	1	2	3	4	5	6	7	8	9	10
Language tapes / self instruction	0	1	2	3	4	5	6	7	8	9	10
Language classes	0	1	2	3	4	5	6	7	8	9	10

(6) In your perception, how much of a foreign accent do you have in this language?

0	1	2	3	4	5	6	7	8	9	10
None	Almost none	Very light	Light	Some	Moderate	Considerable	Heavy	Very heavy	Extremely heavy	Pervasive

(7) Please circle how frequently others identify you as a non-native speaker based on your accent in this language:

0	1	2	3	4	5	6	7	8	9	10
Never	Almost Never				Half of the time					Always

APPENDIX D: Interview Questions

1. How do you identify yourself?
    - *Canadian, Chinese, Chinese-Canadian, CBC, Canadian-Chinese, Asian*

2. Do you think it's important to be able to speak your heritage language? Why?

3. How do you feel about your/your child(ren)'s proficiency in Chinese? What would you change if you could?

4. Would you want your children/grandchildren to be able to speak Chinese? If yes, what steps would you take to make this happen?

5. How would you describe your usage of your heritage language? In what situations?

6. Is your heritage language important for consuming media like music, movies, or fashion?

Ask questions 7+8 OR question 9 depending on appropriateness
7. What made you/your children enroll in the Mandarin-English bilingual program?

8. What was your/your child(ren)'s experience with the program? What did you get out of it?

9. Were you aware that the Mandarin-English bilingual program existed? If so, what made you/your child(ren) choose a different school program?

APPENDIX E: Interview Coding

CODE	DEFINITION	EXEMPLAR QUOTE
Cultural Identity Beyond Language	Discussion relating to aspects of culture and heritage that transcend language alone	I think the culture is very important, not based just on language, on our food, our traditions. We still maintain that, you know, celebrating Chinese New Year, and respecting your elders, that's still in our family. Even though we don't speak, read, or write Chinese, but I think it's important for any culture to maintain the heritage. (non-MEBP-07)

Current Usage of Heritage Language		
Community	Use of the heritage language outside of the home in the wider Chinese community (e.g., church, restaurants, cultural activities)	I will use a small bit of Mandarin with people who speak Chinese, just so they know that I have Chinese heritage. (PARENT-03)
Daily Tasks	Use of the heritage language to conduct everyday tasks (e.g., banking, meals)	I think my Cantonese could be improved. Like I feel like it's very limited to things that you encounter at home every day, like eating dinner, "have you done your homework" type of things. (MEBP-03)
Deterrents	Factors that decrease the likelihood of using the heritage language	I am, like, too ashamed of my proficiency to even begin a conversation, so it is […] not my choice. (non-MEBP-06)
Entertainment	Use of the heritage language to consume entertainment (e.g., movies, TV, music)	I'm still listening to some of that music and it's nice to have, you know, a bit of a mix-up, and to keep the heritage as well as enjoy the music at the same time. (MEBP-10)

Family	Use of the heritage language to communicate with family members	It's very mixed up now, it's hard to tell what language. Sometimes they speak some Chinese, sometimes they speak English. Or maybe it's English with some Chinese thrown in. Chinese will be spoken with English grammar. For example, she might say "拎-ing 出去", she'll add the "-ing" to it. It's quite messed up, but we also think it's funny. This is the way multicultures are. (PARENT-09)
Friends	Use of the heritage language to communicate with friends and peers	Occasionally with […] friends who are Cantonese- speaking, we pepper it in, but very minor. (MEBP-08)
Language Barrier	Factors relating to miscommunications due to usage of the heritage language	If we're talking about deeper topics, then maybe they will not understand as well. So maybe the interactions are a bit more shallow, and not as deep. (PARENT-04)
Literacy	Use of the heritage language for reading or writing	I think, like, my reading and writing is not necessary for everyday life, but it's nice to have. (MEBP-03)
Travel	Use of the heritage language during travel outside of Canada	I use it the most would probably be, like, when I'm in Hong Kong and everyone around me is speaking Cantonese. (MEBP-06)
Work	Use of the heritage language in a work environment	A lot of people that come into where I work, they speak Chinese only and so it's nice to be able to speak with them. And then explain things to them in the language that they understand. (MEBP-11)

Identity	Opinions relating to identity and self-perception	Because they were born here, grew up here, like, to them, they believe themselves as Canadian. But yet, you know, the appearance doesn't look like a normal Canadian, like, Caucasian Canadian. So they're, you know, they're trying to find some kind of identity. (PARENT-16)

Importance of Heritage Language		
Chinese Prestige	Perceptions that learning Chinese as a heritage language is beneficial due to the importance of Chinese on the world stage	First of all, Cantonese, and especially Mandarin, is one of the most common languages in the world, with many speakers. (PARENT-12)
Communicate	Perceptions that learning a heritage language allows one to communicate with a greater range of individuals	I think it has been very important for me, because I wouldn't be able to communicate with my parents to the same level if I didn't speak Chinese, and that is very important to me. (MEBP-03)
Culture / Heritage	Perceptions that learning a heritage language is beneficial for connecting to the heritage culture	The heritage language is part of their culture, part of our culture. If they know how to use their heritage language, then I think it will lead that person to understand more of their culture. (PARENT-06)
Entertainment	Perceptions that learning a heritage language is beneficial in exposing one to new forms of entertainment	I think having the language exposed me to the pop culture, exposed me to the media, so it kept that link open. (MEBP-08)
Future Opportunities	Perceptions that learning a heritage language is beneficial as it leads to a wider range of future opportunities	If you know Mandarin, then you can go anywhere in China or anywhere with a Chinese immigrant population. On the other hand, Cantonese has some limitations, right? If you

		go to some big corporations that work with China, they will still be looking for your capability in Mandarin. If you speak Cantonese, it is not quite as good. (PARENT-07)
General Bilingualism	Perceptions that learning a heritage language carries the cognitive advantages of bilingualism (e.g., increased cognitive flexibility, increased executive functioning, etc.)	I think being bilingual is always an asset, not only in, like, professional development or in future careers, but also just, like, in working that part of your brain, and being able to access different parts of your brain, or, like, use them in ways that you wouldn't normally when you're just using one language. (non-MEBP-10)
Societal Expectations	Perceptions that learning a heritage language is beneficial to fulfill societal expectations	I think that other people, particularly because we are a "visible minority", people will expect you to speak your own language. (PARENT-08)
Travel	Perceptions that learning a heritage language is beneficial for travel opportunities	It sure comes in handy when you're […] travelling, (PARENT-01)
Unnecessary	Perceptions that learning a heritage language is not necessary	I think being born and raised here in Canada and living here in Canada now— the need for […] Chinese isn't very large. (MEBP-05)

Mandarin-English Bilingual Program (MEB)		
Academics	Perceptions regarding the academics of the MEB	When you take this program, definitely they will take away the time for the other subjects. (PARENT-05)
Culture	The role of the MEB in teaching students about Chinese culture	I do believe that the bilingual program, bilingual Mandarin program, taught my kids culture. So to me, that's the objective, and language is a

		lovely by-product, which they may or may not retain. (PARENT-10)
Decision for Enrollment	Reasons relating to the decision to enroll or not in the MEB	My parents decided it would be a good chance for me to learn more about Chinese language and culture. (MEBP-04)
Friendship	The role of the MEB in developing friendships	I got out a lot of friendships that I developed over the years. (MEBP-09)
Language	The role of the MEB in teaching students Mandarin	I also don't think that I would be speaking Mandarin at the level that I am without it, and so I think in terms of learning Mandarin as a third language, I think that was quite valuable. I don't think that I would've gotten that same exposure because my family is not a Mandarin-speaking family. (MEBP-08)
Literacy	The role of the MEB in teaching students Chinese literacy	I think in Mandarin when I read and write because that's how I learned to read and write - it's in Mandarin. (MEBP-06)
Maintenance	Challenges related to the preservation of Mandarin after graduation from the MEB	It's tough to maintain something out of the classroom and I haven't interacted with the classroom setting Chinese for about five years, so there is definitely a drop-off in the skill level. (MEBP-10)
Opportunities	The role of the MEB in providing opportunities for its students, both during the program and after graduation	I definitely really loved the opportunities it gave me. Like I got to go to China Bridge, […] and like doing different trips with the school and things like that. (MEBP-14)
Regrets	Regrets connected to the MEB	If I could go back and change a lot of things, I would definitely […] put more effort into

		retaining what I learned in school. (MEBP-09)
Staff	The role of the staff in the MEB	I believe that teacher is the most important factor for children learning in the Mandarin bilingual program. (PARENT-16)

Transmission of Heritage Language		
1st Generation	The role of first-generation Chinese-Canadian immigrants in helping later generations learn their heritage language	I think I would ask my parents to really try their best to encourage them to speak the language and to teach them the language, because I'm sure they'll do a much better job than I'll be able to. (non-MEBP-10)
Community	The influence of a Chinese community in helping later generations learn their heritage language	Sometimes the settings force them to use Chinese, so then they know how to act. Apart from the home, you need to find a group that also uses Mandarin. (PARENT-02)
Entertainment	The influence of entertainment (e.g., TV shows, movies, music) in helping later generations learn their heritage language	I think what was able to build my Cantonese was watching those TV shows and dramas with my parents every night for dinner. (non-MEBP-04)
Expectations	Expectations related to the heritage language proficiency of later generations	You don't have to be super good at it, but you should understand it and know the basics. (PARENT-14)
Home Usage	The influence of using the heritage language in the home environment in helping later generations learn their heritage language	I think my kids would need to learn Chinese […] by using it, not just learning it, instead of having a one-way education, so I think […] part of it would also be speaking it at home as well, especially […] in their development phase – I would

		speak both Chinese and English to them. (non-MEBP-04)
Language Programs	The influence of language programs in helping later generations learn their heritage language	I'm hoping […] that I can, you know, put them into Chinese school or something like that. (MEBP-11)
Literacy	The influence of literacy in helping later generations learn their heritage language	We have lots of different experienced and professional people, teachers and professors, telling us, if you want to keep your second language here, it will be a huge bonus already if you can keep it, like, speaking and listening. […] If you find no time, don't worry about reading and writing. (PARENT-05)
Motivation	The role of motivation in learning or maintaining a heritage language	I think I definitely wish I was a lot more fluent and a lot more proficient. I didn't take advantage of the time that I had in Chinese school because I think I saw it as something that wasn't necessary, but now I'm realizing, like, it is a big asset to be able to know a second language. (non-MEBP-10)
Peers	The influence of peers in helping later generations learn their heritage language	If it really is to be passed to the next generation, the best thing to do is to have your children find a spouse that is also Chinese. (PARENT-02)
Travel	The influence of travel in helping later generations learn their heritage language	I feel like if I was immersed in it, maybe if I went to China or something, I could maybe pick it up again. (MEBP-13)