

## **Heritage Language Learning and Ethnic Identity Maintenance among Chinese-Canadian Adolescents**

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**Abstract.** Heritage language learning and ethnic identity maintenance are two salient issues for minority adolescents in Canada. Based on a questionnaire survey of 515 Chinese-Canadian adolescents conducted in a western Canadian city, this paper explores respondents' motivations to learn heritage language and their maintenance of ethnic identity. The findings revealed that respondents considered the learning of heritage language to be important and demonstrated a strong communicative orientation of heritage language acquisition. Multiple ordinary least-squares regression further demonstrated that sex, age, religious affiliation, integrative motivation to learn, ethnic identity, exposure to ethnic media, and parental encouragement were significantly associated with academic performance in heritage language school, whereas age, country of birth, Chinese language proficiency, exposure to ethnic media, intention to further studies in ethnic homeland, and medium of communication with parents were significantly related to ethnic identity maintenance.

**Keywords:** *heritage language learning; ethnic identity maintenance; Chinese-Canadian adolescents*

### **Introduction**

Canada is one of the most diverse countries in the world. The multi-ethnic and multi-lingual nature of this country is rapidly growing as a result of increased immigration from Asia, the Middle East, Africa, as well as Central and South America. According to the 2011 National Household Survey (NHS), Canada had a foreign-born population of about 6,775,800 people, representing 20.6% of the total population. Among the immigrants whose mother tongue was other than English or French, Chinese languages (i.e., Mandarin, Cantonese, and other Chinese dialects) were the most common mother tongues. A total of about 852,700 individuals reported these languages. In total, Chinese languages were reported by 13% of the foreign-born population with single mother tongue (Statistics Canada 2014). As regards ethnic origin, over 200 different ethnic origins were reported. Approximately 1,487,580 individuals identified themselves as Chinese. The Chinese people made up the

second largest visible minority group, forming 21.1% of the visible minority population and 4% of Canada's total population (Statistics Canada 2013).

Heritage language learning and ethnic identity maintenance are two salient issues facing ethno-cultural groups in multicultural and multilingual countries such as Canada. Indeed, heritage language is considered an indispensable tool for conveying a sense of the families' history and heritage to their offspring (Guardado 2010; He 2006; Kouritzin 2006; Suarez 2007), whereas ethnic identity constitutes a crucial part of self-definition that affects the way in which individuals feel about themselves, process information, and present themselves in the social environment (Sue, Mak, and Sue 1998: 305). As well, ethnic identity serves basic psychological needs, such as the sense of belongingness and historical continuity (McGoldrick, Giordano, and Garcia-Preto 2005). Notably, research has demonstrated the positive impact of ethnic identity on minorities' self-esteem (Cavazos-Rehg and DeLucia-Waack 2009; Xu, Farver, and Pauker 2015; Yuh 2005), psychological well-being (Adams et al. 2016; Chae and Larres 2010; Costigan, Koryzma, Hua, and Chance 2010; Kiang, Gonzales-Backen, Yip, Witkow, and Fuligni 2006; Lee 2003; Seaton, Scottham, and Sellers 2006), and academic success (Adelabu 2008; Autiero 2017; Chang and Le 2010; Hernández et al. 2014; Morales 2010; Ong, Phinney, and Dennis 2006; Supple, Ghazarian, Frabutt, Lunkett, and Sands 2006; Umaña-Taylor, Diversi, and Fine 2002; Urdan and Munoz 2012).

A plethora of studies are available on heritage language retention and ethnic identity maintenance of various minority groups in Canada (Abdi 2011; Bosdki 1991; Clarke 1996; Dhruvarajan 1993; Feuerverger 1991, 1986; Guardado 2010; Jurva and Jaya 2008; Karumanchery 1996; Lalonde, Taylor, and Moghaddam 1992; Mitsopoulos 1989; Nakahara 1991; Noro 2009, 1987; Okuno 1993; Sengupta 1987; Subhan 2007; Tan 1992). Comparatively speaking, research on heritage language learning and ethnic identity retention among the Chinese, which have now become one of the largest visible minority groups in Canada, has been surprisingly sparse in view of its complexity and importance.

In fact, previous studies on Chinese language learning have employed an ethnographic approach (Chan 1989; Curdt-Christiansen 2006), investigated the effects of a single variable (e.g., parental influence) on heritage language retention (Shi 2016; Cheung 1981), used a single vignette approach (Han 2012), adopted a quantitative approach using a relatively small sample (Man 1997), and focused on adults (Comanaru and Noels 2009). On the other hand, studies of ethnic identity

among ethnic Chinese have studied children and youth using a qualitative approach (Hiller and Chow 2005; Tsang, Irving, Alaggia, Chau, and Benjamin 2003), a narrative approach with a single participant (Chan 2009), a quantitative approach with a limited sample size (Kester and Marshall 2003; Lay and Verkuyten 1999) and dealt with adults (Kwong 1998). To extend this line of research and to fill a gap in the research literature, this paper examines the orientations to heritage language learning, heritage school performance, and ethnic identity maintenance among Chinese-Canadian adolescents in a western Canadian city.

## **Method**

### ***Sample***

The data for the present analyses were based on a questionnaire survey of 515 Chinese-Canadian students enrolled in three different heritage language schools in Calgary, Alberta (Chow 2012, 2004). The sample comprised 255 male (50%) and 255 female (50%) students with a mean age of 14.24 years ( $SD = 1.92$ ). Almost two-thirds ( $n = 323$ , 63.7%) were born in Canada and about one-third ( $n = 164$ , 32.3%) were born in Hong Kong. The average length of residence in Canada was 11.96 years ( $SD = 4.06$ ). An overwhelming majority of the students were Canadian citizens ( $n = 470$ , 93.8%).

### ***Measures of key variables***

*Motivations to learn heritage language.* The motivational orientations to heritage language learning was measured using a 22-item scale on a 5-point scale (1 = very unimportant; 2 = unimportant; 3 = uncertain; 4 = important; 5 = very important). A subset of these items was adapted from Feuerverger's (1986) ethnolinguistic scale which was based on Gardner and Lamberts' (1972) integrative (i.e., learning a language because of a positive affective disposition towards the language community and the desire to achieve language proficiency in order to participate in and develop a sense of belonging to the language community) and instrumental (i.e., learning the language as a means of achieving practical goals such as improving one's economic status or getting social recognition) motivational orientations to foreign language learning.

*Academic performance in heritage language school.* Academic performance was based on respondents' self-reported grades obtained in heritage language school

using a 5-point scale (1 = Grade E or 48% or below; 2 = Grade D or 50-59%; 3 = Grade C or 60-69%; 4 = Grade B or 70-79%; 5 = Grade A or 80-100%).

*Ethnic self-identification and ethnic identity maintenance.* Ethnic identity (i.e., an individual's sense of belonging to an ethnic group and the part of one's thinking, perception, feelings, and behaviour that is due to ethnic group membership) was measured using an 8-item scale adapted from Phinney's (1992) Multi-group Ethnic Identity Scale. Ethnic self-identification was based on the respondents' preferred ethnic label to describe themselves (e.g., Canadian, Chinese-Canadian, or Chinese).

### **Statistical analysis**

The Statistical Package for the Social Sciences was used to analyze the data. Descriptive and inferential analyses were conducted. Cronbach's alpha reliability test was employed to explore the internal consistency of all scales used. Factor analysis was employed to explore the factorial structure of the motivational orientations to heritage language learning scale. Two multiple ordinary least-squares (OLS) regression models were constructed to identify the key determinants of respondents' heritage school performance and ethnic identity maintenance.

## **Findings**

### ***Motivations to attend heritage language school***

Table 1 displays the descriptive statistics for the twenty-two items measuring motivational orientations to heritage language learning. The top five reasons reported by the respondents for attending Chinese language schools included: (1) To be able to communicate with my parents in Chinese ( $M = 4.05$ ,  $SD = 1.09$ ); (2) Because it is important to my parents ( $M = 3.91$ ,  $SD = 1.14$ ); (3) Because I am interested in traveling to my ethnic homeland ( $M = 3.86$ ,  $SD = 1.22$ ); (4) To be able to speak with other Chinese in their mother tongue ( $M = 3.84$ ,  $SD = 1.06$ ); and (5) To be able to watch Chinese TV programs/videos and to listen to Chinese radio broadcasts ( $M = 3.84$ ,  $SD = 1.16$ ). The results demonstrated that respondents placed a great deal of emphasis on the importance of learning their heritage language for practical (i.e., communicative and instrumental) purposes.

A principal component factor analysis using varimax rotation was conducted to explore the underlying dimensions of these items. The analysis revealed three factors with eigenvalues exceeding 1, accounting for a total of 59.10% of the

variance. The three factors were labelled “communicative,” “instrumental,” and “integrative” orientations to heritage language learning. Eleven items (a, b, c, d, e, f, g, m, n, o and r) were loaded on the “communicative orientation” factor, accounting for 26.05% of the variance (Eigen value = 5.73). These items focused principally on learning the Chinese language for communication purposes. Eight items (h, i, p, q, s, t, u, and v) were loaded on the “instrumental orientation,” accounting for 22.88% of the variance (Eigen value = 5.03). These items dealt primarily with practical reasons for learning the Chinese language. Three items (j, k, and l) were loaded on the “integrative orientation,” explaining 10.17% of the variance (Eigen value = 2.24). The main focus of these items was on the significance of gaining respect or acceptance from both ethnic group members and outsiders. The Cronbach’s alpha reliability coefficients for these three factors were .92, .88, and .73 respectively.

**Table 1: Motivations to learn the Chinese language**

	1	2	3	4	5	
	n (%)	n (%)	n (%)	n (%)	n (%)	M (SD)
a. To be able to speak with my parents in Chinese	27 (5.3)	29 (5.7)	44 (8.6)	205 (40.0)	208 (40.5)	4.05 (1.09)
b. As an expression of commitment to my heritage	21 (4.1)	27 (5.3)	100 (19.5)	247 (48.1)	118 (23.0)	3.81 (.98)
c. To be able to read Chinese newspapers, magazines, and books	48 (9.3)	70 (13.6)	114 (22.2)	175 (34.0)	107 (20.8)	3.43 (1.22)
d. To be able to watch Chinese TV programs/videos and to listen to Chinese radio broadcasts	33 (6.4)	41 (8.0)	68 (13.3)	202 (39.5)	168 (32.8)	3.84 (1.16)
e. Because it is important to my parents	27 (5.3)	36 (7.0)	90 (17.5)	163 (31.8)	197 (38.4)	3.91 (1.14)
f. Because it is important for the future of the Chinese culture in Canada	26 (5.1)	31 (6.0)	124 (24.2)	198 (38.6)	134 (26.1)	3.75 (1.07)
g. To help me better understand my Chinese background	33 (6.4)	35 (6.8)	92 (18.0)	222 (43.4)	130 (25.4)	3.74 (1.11)
h. Because I like to learn languages	44 (8.6)	59 (11.5)	151 (29.4)	166 (32.4)	93 (18.1)	3.40 (1.16)
i. Because I need it for my future career	30 (5.8)	26 (5.1)	147 (28.7)	152 (29.6)	158 (30.8)	3.74 (1.12)
j. Because other Chinese will respect me more if I know the Chinese language	42 (8.2)	54 (10.5)	124 (24.2)	197 (38.5)	95 (18.6)	3.49 (1.15)
k. Because non-Chinese will respect me more if I know my ethnic language	42 (8.2)	63 (12.3)	203 (39.7)	134 (26.2)	69 (13.5)	3.24 (1.09)
l. Because most of my friends are also attending Chinese language school	95 (18.4)	126 (24.7)	148 (29.0)	110 (21.6)	32 (6.3)	2.72 (1.18)

	1	2	3	4	5	M (SD)
	n (%)	n (%)	n (%)	n (%)	n (%)	
m. To be able to speak with other Chinese in their mother tongue ( <i>i.e. Chinese</i> )	25 (4.9)	31 (6.1)	91 (17.8)	216 (42.4)	147 (28.8)	3.84 (1.06)
n. To allow me to participate more freely in activities within the Chinese community	33 (6.5)	54 (10.6)	126 (24.8)	186 (36.6)	109 (21.5)	3.56 (1.13)
o. To help me increase my understanding of the Chinese culture in Canada.	33 (6.5)	55 (10.8)	114 (22.4)	202 (39.6)	106 (20.8)	3.57 (1.13)
p. Because I would like to get a job where I could use the Chinese language	43 (8.4)	53 (10.4)	165 (32.2)	149 (29.1)	102 (19.9)	3.42 (1.16)
q. Because learning the Chinese language will help me to learn other languages	56 (11.0)	72 (14.1)	197 (38.6)	116 (22.7)	70 (13.7)	3.14 (1.16)
r. Because other Chinese may relate to me better if I have a knowledge of the Chinese language	22 (4.3)	31 (6.1)	117 (22.9)	221 (43.3)	119 (23.3)	3.75 (1.02)
s. Because I am interested in travelling to my ethnic homeland ( <i>e.g., Hong Kong, Mainland China, Taiwan</i> )	43 (8.4)	26 (5.1)	84 (16.4)	165 (32.2)	194 (37.9)	3.86 (1.22)
t. Because I may further my studies in my ethnic homeland ( <i>e.g., Hong Kong, Mainland China, Taiwan</i> )	60 (11.7)	68 (13.3)	193 (37.8)	115 (22.5)	75 (14.7)	3.15 (1.18)
u. To help me increase my understanding of the culture in my ethnic homeland ( <i>e.g., Hong Kong, Mainland China, Taiwan</i> )	33 (6.5)	45 (8.8)	152 (29.7)	181 (35.4)	100 (19.6)	3.53 (1.10)
v. Because I may want to live in my ethnic homeland ( <i>e.g., Hong Kong, Mainland China, Taiwan</i> )	79 (15.4)	70 (13.7)	174 (34.0)	103 (20.1)	86 (16.8)	3.09 (1.27)

1 = Strongly disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree; 5 = Strongly agree

### **Academic Performance in Heritage Language School**

A majority of the respondents reported having obtained a grade point average of 80-100% (n = 363, 71.5%). Slightly more than one-fifth (n = 109, 21.5%) attained 70-79%. Relatively few respondents obtained 60-69% (n = 27, 5.3%), 50-59% (n = 4, .8%), or a failing grade (*i.e.*, 49% or below) (n = 5, 1.0%).

### **Ethnic Self-identification and Ethnic Identity Maintenance**

A majority of the respondents (n = 343, 67.8%) indicated their preference to self-identify themselves as “Chinese-Canadian.” Slightly more than one-fifth (n = 103, 20.4%) preferred the use of the “Chinese” label. Relatively few respondents (n = 55, 10.9%) identified themselves as “Canadian.” With respect to ethnic identity, as

shown in Table 2, the mean scores ranged from 3.43 to 4.16, demonstrating that most respondents displayed a relatively strong ethnic identity. It is noteworthy that a substantial proportion of the sample felt good about their Chinese background ( $n = 418, 81.2\%$ ) and were happy to be a member of their ethnic group ( $n = 424, 82.5\%$ ).

**Table 2: Ethnic identity maintenance**

	1	2	3	4	5	
	n (%)	n (%)	n (%)	n (%)	n (%)	M (SD)
I feel good about my cultural (Chinese) background	9 (1.7)	9 (1.7)	79 (15.3)	210 (40.8)	208 (40.4)	4.16 (.87)
I feel a strong attachment towards my own ethnic group	12 (2.3)	33 (6.4)	146 (28.3)	188 (36.5)	136 (26.4)	3.78 (.98)
I have a lot of pride in my ethnic group and its accomplishment	11 (2.1)	10 (1.9)	125 (24.3)	194 (37.7)	175 (34.0)	3.99 (.92)
I have spent time trying to learn more about Chinese culture, traditions, and customs	25 (4.9)	69 (13.4)	163 (31.7)	175 (34.0)	83 (16.1)	3.43 (1.06)
I have a good sense of my Chinese background and what it means to me	10 (1.9)	30 (5.8)	144 (28.0)	220 (42.7)	111 (21.6)	3.76 (.92)
I am happy that I am a member of the group I belong to	9 (1.8)	9 (1.8)	72 (14.0)	219 (42.6)	205 (39.9)	4.17 (.86)
I have a strong sense of belonging to my own ethnic group	9 (1.7)	17 (3.3)	122 (23.7)	209 (40.6)	158 (30.7)	3.95 (.91)
I participate in cultural practices of own group, such as Chinese food, music, or customs	11 (2.1)	33 (6.4)	79 (15.3)	199 (38.6)	193 (37.5)	4.03 (.99)

1 = Strongly disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree; 5 = Strongly agree

### Multivariate Analysis

To explore the determinants of respondents' academic performance in heritage language school and ethnic identity maintenance, two multiple OLS regression models were constructed. The operational definitions of the various predictor variables included in the two regression models are presented in the Appendix.

Concerning academic performance in heritage language school, as shown in Table 3, the multiple OLS regression model was found to be significant ( $F(15,498) = 7.137, p < .01$ ) and 15.2% of the variance in academic performance was accounted for. Sex ( $\beta = -.106, p < .05$ ), age ( $\beta = -.119, p < .01$ ), religious affiliation ( $\beta = .088, p <$

.05), integrative motivation to learn ( $\beta = .116, p < .05$ ), ethnic identity ( $\beta = .102, p < .05$ ), exposure to ethnic media ( $\beta = .099, p < .05$ ), and parental encouragement ( $\beta = .970, p < .01$ ) were found to be significantly related to academic performance in Chinese language school. More specifically, females, younger respondents, and those who professed to be Protestant or Catholic, placed greater emphasis on integrative purposes for learning heritage language, displayed a strong ethnic identity, reported more frequent exposure to ethnic media, and received more parental encouragement were found to perform better academically in the Chinese language school.

**Table 3: Unstandardized & standardized regression coefficients for effects of socio-demographic & background variables on academic performance**

	<b>b</b>	<b><math>\beta</math></b>
Sex	-2.378	-.106 *
Age	-3.152	-.119 **
Religion	2.027	.088 *
Socio-economic status	.939	.054
Country of birth	-1.894	-.081
Parents' education	.140	.045
Motivations to learn heritage language		
Communicative motivation	-.056	-.045
Instrumental motivation	-.178	-.110
Integrative motivation	.478	.116 *
Attitudes toward multiculturalism	1.046	.092
Chinese language school experience	.880	.087
Vitality of the Chinese language to parents	-1.308	-.093
Exposure to ethnic media	.274	.099 *
Ethnic identity	.225	.102 *
Parental encouragement	.970	.117*
(Constant)	71.845	
F	7.137 ***	
R <sup>2</sup>	.177	
Adjusted R <sup>2</sup>	.152	
N	513	

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

With respect to ethnic identity maintenance, as displayed in Table 4, the overall multiple OLS regression model was found to be significant ( $F(11,502) = 19.272, p < .001$ ) and 28.2% of the variance in ethnic identity maintenance was accounted for. Age ( $\beta = .100, p < .01$ ), country of birth ( $\beta = .122, p < .01$ ), socio-

economic status ( $\beta = .077, p < .05$ ), Chinese language proficiency ( $\beta = .256, p < .001$ ), exposure to ethnic media ( $\beta = .219, p < .001$ ), intention to further studies in ethnic homeland ( $\beta = .145, p < .01$ ), and medium of communication with parents ( $\beta = -.115, p < .01$ ) were found to be significantly related to respondents' ethnic identity maintenance. More specifically, older respondents and those who were born in Canada or the United States, indicated a higher socio-economic status (SES), assessed their proficiency in the Chinese language to be higher, reported a greater exposure to ethnic media, demonstrated a stronger desire to pursue further studies in ethnic homeland, communicated with parents in Chinese more frequently in Chinese were found to display a stronger ethnic identity.

**Table 4: Unstandardized & standardized regression coefficients for effects of socio-demographic and background variables on ethnic identity maintenance**

	<b>b</b>	<b>β</b>
Sex	-.111	-.010
Age	.310	.100 **
Religion	-.499	-.041
Country of birth	1.483	.122 **
Socio-economic status	.693	.077 *
Chinese language proficiency	.439	.256 ***
Exposure to ethnic media	.315	.219 ***
Discrimination experience	.199	.011
Intention to study in ethnic homeland	.718	.145 **
Intention to reside in ethnic homeland	.249	.054
Medium of communication with parents	-.779	-.115 **
(Constant)	25.994	
F	19.272 ***	
R <sup>2</sup>	.297	
Adjusted R <sup>2</sup>	.282	
<b>N</b>	<b>513</b>	

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

### Discussion and Conclusion

This investigation contributes to the study of heritage language learning and ethnic identity maintenance among Chinese adolescents in a western Canadian city. The findings revealed that most Chinese-Canadian adolescents generally performed well in heritage language school and were strongly identified with their ethnic group.

The various socio-demographic and situational variables that significantly affected Chinese adolescents' performance in heritage language schools and their maintenance of ethnic identity have been identified.

As regards academic performance in heritage language school, female students were found to perform better than their male counterparts. Earlier studies have consistently shown that females outperformed male students in second language acquisition (Van De Gaer, Pustjens, Van Damme, and De Munter 2007; Van der Slik, Van Hout, and Schepens 2015). Consistent with results from earlier research demonstrating the positive impact of religion on educational outcomes (Dijkstra and Peschar 1996; Loury 2004; Mooney 2010; Park 2001; Regnerus 2000), students who reported a religious affiliation (i.e., Protestant or Catholic) were found to perform better. Additionally, the higher grades obtained by students whose parents provided encouragement underscores the importance of parental involvement in children's education. In a similar vein, younger students' higher academic performance may be linked to their closer parental supervision than their older counterparts. Previous studies have shown that Asian parents had a significant influence and placed considerable pressure on their children to achieve academically (Castro and Rice 2003; McBride-Chang and Chang 1998; Cheng and Starks 2002; Crystal et al. 1994; Dandy and Nettelbeck 2002; Goyette and Xie 1999; Wong 1990; Youn 1993). The positive impact of students' frequent exposure to ethnic media and stronger Chinese identity on performance in Chinese language school are not unexpected (Brown and Chu 2012; Chang and Le 2010; Rust, Jackson, Ponterotto, and Blumberg 2011). As well, students who placed greater emphasis on integrative motivation to learn were found to perform better. Their stronger desire to develop a sense of belonging to their own ethnic group has perhaps provided an incentive to take their heritage language classes more seriously. In fact, the importance of the role of integrative motivation on students' learning outcomes has been noted in the literature (Hernández 2006; Khodadad and Kaur 2016; Rúa 2006).

Concerning ethnic identity maintenance, it is peculiar to note the positive association between age and ethnic identity. Perhaps older respondents were more cognizant of their "differentness" from members of the mainstream society. There is empirical evidence showing that minority adolescents' recognition of their cultural separateness is associated with a positive sense of valuing their ethnic origins (Rosenthal and Hrynevich 1985). Country of birth emerged as another significant predictor. Individuals who were born in Canada or the United States displayed a

stronger ethnic identity. Additional research would be needed to ascertain this finding. Besides socio-demographic variables, other contextual factors such as locality and political strength of the ethnic group may have a significant impact on its members' ethnic identity (Epstein and Heizler Cohen 2015; Noro 2009). With respect to SES, respondents who scored higher on the SES scale were found to be more strongly identified with their ethnic identity. This finding requires further clarification as contradictory result has been reported in the literature (Kaplan, Brown, Huynh, and Huynh 2016). As expected, students who assessed their proficiency in the Chinese language to be higher, reported a greater exposure to ethnic media, expressed a stronger desire to pursue further studies in ethnic homeland, and communicated with parents in Chinese more frequently were found to be associated with a stronger ethnic identity. Indeed, the close association between ethnic identity and heritage language use has been well-documented (Geerlings, Verkuyten, and Thijs 2015; Mu 2015; Oh and Fuligni 2010).

The findings from the present investigation would be beneficial not only to the various heritage language schools and boards of education, but to all other educational institutions where ethnic language courses are offered. The results could be used as basic information for curriculum development and academic counselling. Several limitations of the current study should be noted. Although this study involved students from all the major heritage language schools in a western Canadian city, a non-random sample was used. Moreover, the analysis relies on cross-sectional data. Statements about causality are, therefore, tenuous at best.

In order to account for these limitations, a longitudinal design should be employed to further substantiate the causal relationships among the study variables. Further studies also need to explore the formation process of Chinese-Canadian adolescents' ethnic identity using qualitative approaches. In-depth interviews would allow them to share their language learning experiences and to reflect on how they have been seeking their ethnic identity while living in a multiethnic country. As the present study involved Chinese students attending heritage language schools, it would be worthwhile to investigate those who do not take Chinese language courses. In light of the growing ethnic and racial diversity in the Canadian school system, comparative studies exploring the experiences of other minority students would also be fruitful.

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## Appendix:

### Definitions of the Predictor Variables Used in Regression Models

#### Model I: Academic Performance in Heritage Language School

*Communicative motivation* ( $M = 41.32$ ,  $SD = 9.12$ ) was a composite score based on respondents' degree of agreement or disagreement with the following eleven statements measured using a 5-point scale ranging from 1 = strongly disagree to 5 = strongly agree: (1) To be able to speak with my parents in Chinese ( $M = 4.05$ ,  $SD = 1.09$ ); (2) As an expression of commitment to my heritage ( $M = 3.81$ ,  $SD = .98$ ); (3) To be able to read Chinese newspapers, magazines, and books ( $M = 3.43$ ,  $SD = 1.22$ ); (4) To be able to watch Chinese TV programs/videos and to listen to Chinese radio broadcasts ( $M = 3.84$ ,  $SD = 1.16$ ); (5) Because it is important to my parents ( $M = 3.91$ ,  $SD = 1.14$ ); (6) Because it is important for the future of the Chinese culture in Canada ( $M = 3.75$ ,  $SD = 1.07$ ); (7) To help me better understand my Chinese background ( $M = 3.74$ ,  $SD = 1.11$ ); (8) To be able to speak with other Chinese in their mother tongue (i.e., Chinese); (9) ( $M = 3.84$ ,  $SD = 1.06$ ); (10) To allow me to participate more freely in activities within the Chinese community ( $M = 3.56$ ,  $SD = 1.13$ ); and (11) Because other Chinese may relate to me better if I have a knowledge of the Chinese language ( $M = 3.75$ ,  $SD = 1.02$ ). This 11-item scale has a Cronbach's alpha reliability coefficient of .92.

*Instrumental motivation* ( $M = 41.32$ ,  $SD = 9.12$ ) was a composite score based on respondents' degree of agreement or disagreement with the following statements measured using a 5-point scale ranging from 1 = strongly disagree to 5 = strongly agree: (1) Because I like to learn languages ( $M = 3.40$ ,  $SD = 1.16$ ); (2) Because I need it for my future career ( $M = 3.74$ ,  $SD = 1.12$ ); (3) Because I would like to get a job where I could use the Chinese language ( $M = 3.42$ ,  $SD = 1.16$ ); (4) Because learning the Chinese language will help me to learn other languages ( $M = 3.14$ ,  $SD = 1.16$ ); (5) Because I am interested in travelling to my ethnic homeland ( $M = 3.86$ ,  $SD = 1.22$ ); (6) Because I may further my studies in my ethnic homeland ( $M = 3.15$ ,  $SD = 1.18$ ); (7) To help me increase my understanding of the culture in my ethnic

homeland (e.g., Hong Kong, Mainland China, Taiwan) ( $M = 3.53, SD = 1.10$ ); and (8) Because I may want to live in my ethnic homeland (e.g., Hong Kong, Mainland China, Taiwan) ( $M = 3.09, SD = 1.27$ ). This 8-item scale has a Cronbach's alpha reliability coefficient of .88.

*Integrative motivation* was a composite score ( $M = 12.92, SD = 3.40$ ) based on respondents' degree of agreement or disagreement with the following three statements measured using a 5-point scale ranging from 1 = strongly disagree to 5 = strongly agree: (1) Because other Chinese will respect me more if I know the Chinese language ( $M = 3.49, SD = 1.15$ ); (2) Because non-Chinese will respect me more if I know my ethnic language ( $M = 3.24, SD = 1.09$ ); and (3) Because most of my friends are also attending Chinese language school ( $M = 2.72, SD = 1.18$ ). This 3-item scale has a Cronbach's alpha reliability coefficient of .72.

*Attitudes toward multiculturalism* ( $M = 3.92, SD = .98$ ) was based on respondents' degree of agreement or disagreement with the statement "People in Canada should take advantage of the multicultural policy and learn about their own culture and language" using a 5-point scale (1 = strongly disagree to 5 = strongly agree).

*Chinese language school experience* ( $M = 2.99, SD = 1.10$ ) was based on respondents' degree of agreement or disagreement with the statement "I enjoy my Chinese classes very much" using a 5-point scale (1 = strongly disagree to 5 = strongly agree).

*Vitality of the Chinese language to parents* ( $M = 3.91, SD = 1.14$ ) was measured on a 5-point scale (1 = very unimportant to 5 = very important).

*Ethnic identity* ( $M = 31.29, SD = 5.89$ ) was an 8-item scale based on respondents' degree of agreement with the following statements using a 5-point scale (1 = strongly disagree to 5 = strongly agree): (1) I feel good about my cultural background ( $M = 4.16, SD = .87$ ); (2) I feel a strong attachment toward my own ethnic group ( $M = 3.78, SD = .98$ ); (3) I have a lot of pride in my ethnic group and its accomplishment ( $M = 3.99, SD = .92$ ); (4) I have spent time trying to learn more about Chinese culture, traditions, and customs ( $M = 3.43, SD = 1.06$ ); (5) I have a good sense of my Chinese background and what it means to me ( $M = 3.76, SD = .92$ ); (6) I am happy that I am a member of the group I belong to ( $M = 4.17, SD = .86$ ); (7) I have a strong sense of belonging to my own ethnic group ( $M = 3.95, SD = .91$ ); and (8) I participate in cultural practices of my own group, such as Chinese food, music, or customs ( $M = 4.03, SD = .99$ ). This 8-item scale was found to be internally consistent, with a Cronbach's alpha reliability coefficient of .89.

*Exposure to ethnic media* ( $M = 12.02, SD = 4.05$ ) was an additive score based on frequency of reading Chinese magazines or newspapers ( $M = 2.18, SD = 1.23$ ), watching Chinese television programs or videos ( $M = 3.79, SD = 1.28$ ), listening to Chinese pop music ( $M = 3.17, SD = 1.44$ ), and listening to Chinese radio broadcasts ( $M = 2.89, SD = 1.34$ ) measured on a 5-point scale (1 = never to 5 = very often/daily).

*Parental encouragement* ( $M = 3.37, SD = 1.17$ ) was based respondents' degree of agreement or disagreement with the statement "I often receive praise or approval from my parents for speaking Chinese" using a 5-point scale (1 = strongly disagree to 5 = strongly agree).

With respect to socio-demographic variables, *age at immigration* ( $M = 2.26$ ,  $SD = 3.63$ ) was measured in years. *Parents' education* ( $M = 7.71$ ,  $SD = 2.15$ ) was a composite score based on the educational level attained by both father and mother (1 = no formal education to 5 = university). *Socio-economic status* ( $M = 3.39$ ,  $SD = .68$ ) was an ordinal scale ranging from 1 (low) to 5 (high). *Sex* (1 = male; 0 = female), *age* (1=16 or above; 0 = other), and *religion* (1 = Christian; 0 = other) were dummy coded.

### **Model II: Ethnic Identity Maintenance**

*Chinese language proficiency* ( $M = 14.47$ ,  $SD = 3.42$ ) was a composite score based on respondents' self-evaluation of the following four components: (1) understanding Chinese ( $M = 4.08$ ,  $SD = .86$ ), (2) speaking Chinese ( $M = 4.04$ ,  $SD = .98$ ), (3) reading Chinese ( $M = 3.16$ ,  $SD = 1.18$ ), and (4) writing Chinese ( $M = 3.19$ ,  $SD = 1.16$ ). This 4-item scale was found to be internally consistent, with a Cronbach's alpha reliability coefficient of .82.

*Exposure to ethnic media* ( $M = 12.02$ ,  $SD = 4.05$ ) was an additive score based on frequency of (1) reading Chinese magazines or newspapers ( $M = 2.18$ ,  $SD = 1.23$ ); (2) watching Chinese television programs or videos ( $M = 3.79$ ,  $SD = 1.28$ ); (3) listening to Chinese pop music ( $M = 3.17$ ,  $SD = 1.44$ ); and (4) listening to Chinese radio broadcasts ( $M = 2.89$ ,  $SD = 1.34$ ) measured on a 5-point scale (1 = never to 5 = very often/daily).

*Discrimination experience* was based on whether or not the respondents had experienced discrimination because of their Chinese background within the past twelve months (1 = yes; 0 = no).

*Intention to study in ethnic homeland* ( $M = 3.15$ ,  $SD = 1.18$ ) and *intention to reside in ethnic homeland* ( $M = 3.09$ ,  $SD = 1.27$ ) were assessed on a 5-point scale ranging from 1 = very unimportant to 5 = very important.

*Medium of communication with parents* ( $M = 1.98$ ,  $SD = .86$ ) was measured on a 5-point scale (1 = Chinese only to 5 = English only).

Regarding socio-demographic variables, *sex* (1 = male; 0 = female), *country of birth* (1 = Canada or the U.S.; 0 = other), and *religion* (1 = Christian; 0 = other) were dummy coded. *Age* ( $M = 14.24$ ,  $SD = 1.92$ ) and *age at immigration* ( $M = 2.26$ ,  $SD = 3.63$ ) were measured in years. *Socio-economic status* ( $M = 3.39$ ,  $SD = .68$ ) was an ordinal scale ranging from 1 (low) to 5 (high).