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**Working Paper**

# Is It Possible to Speak English Without Thinking American? On Globalization and the Determinants of Cultural Assimilation

Working Paper, No. 557

**Provided in Cooperation with:**
Inter-American Development Bank (IDB), Washington, DC

*Suggested Citation:* Chong, Alberto (2006) : Is It Possible to Speak English Without Thinking American? On Globalization and the Determinants of Cultural Assimilation, Working Paper, No. 557, Inter-American Development Bank, Research Department, Washington, DC

This Version is available at:
https://hdl.handle.net/10419/88063

Inter-American Development Bank
Banco Interamericano de Desarrollo (BID)
Research Department
Departamento de Investigación
Working Paper #557

# Is it Possible to Speak English Without Thinking American? On Globalization and the Determinants of Cultural Assimilation

by

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March 2006

**Cataloging-in-Publication data provided by the**
**Inter-American Development Bank**
**Felipe Herrera Library**

Chong, Alberto.

Is it possible to speak English without thinking American? : on globalization and the determinants of cultural assimilation / by Alberto Chong.

p. cm.
(Research Department working paper series ; 557)
Includes bibliographical references.

1. Acculturation—Effect of globalization on. 2. Globalization. 3. Acculturation—Canada—Case studies. I. Inter-American Development Bank. Research Dept. II. Title. III. Series.

305.8 C448 --------dc22


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**Abstract**[*]

Based on research in linguistics and psychology I use language speech as a reflection of acculturation. I use individual and city-level data from the Lake Ontario area in Canada and study the determinants of cultural assimilation. I focus on education, age, income, and in particular, on some variables typically discussed when globalization issues come up, such as immigration, television viewing, borders, and residence history of the individuals. I find that actual contact does matter as a determinant of cultural homogenization. Virtual contact appears to be irrelevant. This finding is robust to changes in specification and to different empirical methods.

**Key Words:** Integration, Globalization, Language, Culture, Governance, North America

[*] I appreciate comments and suggestions from Jack Chambers, Juan José Díaz, Emanuela Galasso, Virgilio Galdo, Florencio López-de-Silanes, Ugo Panizza, Caroline Ratcliffe, Andrés Rodríguez-Clare, Anna Serrichio, Luisa Zanforlin, and Mario Zanforlin. Cecilia Calderon and Rudy Loo-Kung provided excellent research assistance. The views and opinions in this paper should not be attributed to the Inter-American Development Bank or its Executive Directors. Correspondence: Research Department, Inter-American Development Bank, Stop B-900, 1300 New York Avenue, NW, Washington, DC 20577, USA; Tel. (202) 623-1536, Fax (202) 623-2481. E-mail: *albertoch@iadb.org*

## 1. Introduction

The ultimate criticism to globalization is that it homogenizes culture. It has been argued that, whereas there might be economic gains as a result of trade liberalization, increased foreign investment, human capital re-allocation, and the like, such economic gains do not compensate for the cultural losses resulting from integration in society. In fact, the notion that cultural uniqueness should be protected has not gone unnoticed by policymakers who have frequently linked globalization with American cultural dominance as reflected by the world presence of American icons, changing tastes in food and movies and in particular, the widespread use of American English around the world. Interestingly, there is no evidence to support the assertion above, and more generally the determinants of cultural assimilation, despite the fact that this is essentially an empirical question.[1] Unsurprisingly, the reason for this is lack of data, as culture-related information has been particularly difficult to produce in an objective, quantifiable, and thus, comparable manner.

In this paper I take advantage of the fact that language and culture are intimately related.[2] In particular, I use English-language speech in a specific region in Ontario along the Canadian-American border to study some basic economic and non-economic determinants of cultural acculturation in Canada. I focus on specific nuances in spoken English language in this country with respect to the United States, mainly in the area known as the Golden Horseshoe, the western tip of Lake Ontario.[3] Mostly using individual-level data for this area, I construct a simple "Canadian English" index, that captures specific nuances in spoken Canadian English with respect to American English and explore whether commonality in language nuances within English are correlated with a set of characteristics, with special emphasis on variables typically linked with globalization. I focus on closeness in nuances in spoken language as a proxy for cultural integration, as affinity in spoken language reflects commonality in culture that elicits

[1] On the other hand, research in other disciplines has put in doubt a straightforward positive link between globalization and cultural homogenization. For instance, in political science, Huntington (2004) argues that some issues related with globalization produce cultural cleavages in a society.

[2] Perhaps, the classic, but by no means unique example of the intimacy between language and culture is the case of Quebec in Canada, where language laws even stricter than those in France are explicitly used to protect culture and heritage.

[3] The Golden Horseshoe covers an from Oshawa to Niagara Falls, including Scarborough, Toronto, Mississauga, Oakville, Burlington, Hamilton, Saint Catharines, and Welland, very close to the United States border. Over five million people, more than one sixth of Canada's population live in this 120-mile strip. The fact that the focus of this study centers on a highly transited area between two countries that speak the same language and which are culturally very close provides a higher testing bar than simply comparing two random neighboring countries.

shared values, beliefs, customs, and expectations (Chambers, 2003; Chambers and Heisler, Pinker, 2000). Notice that this is true even among individuals who speak the same language, as particular accents, rhythms, slang, and other nuances will further bring a sense of cultural affinity to people. In fact, for years social scientists, social linguists and cognitive scientists have emphasized the importance of language as indicator of cultural identification (Chambers, 2003, Clarke, 1991; Pinker, 2000). As argued by several linguists, language is so highly correlated with cultural identity that a language is considered a medium from which culture cannot be extricated so much so that the loss of a language is considered as a loss of cultural diversity (Hale et al., 1992). Even in economics, researchers have argued that culture and language are implicitly linked in such a manner that language is a crucial tool that either embodies culture or is the crucial element conducive to cultural assimilation (Lazear, 2003).[4]

## 2. Data

The data on Canadian English in this research come from two large individual-level representative surveys performed by the Department of Linguistics of the University of Toronto and funded by the Social Sciences and Humanities Research Council of Canada in the Canadian Golden Horseshoe area in 1991 and 2000. Overall, the questionnaire includes 76 questions that ask for linguistic information in the following categories: pronunciation, general vocabulary, special vocabulary, morphology, syntax, and usage. Each survey includes about 800 respondents and for each one of them there are 11 personal records and 81 linguistic records.

A large section of the survey is structured along the basic lines of the four basic speech differences of Canadian English with respect to American English. In fact, several North American linguists (Chambers, 1995, 2000; Clarke, 1991; Labov, 1991) agree that there are distinguishable differences in average Canadian English and American English speech, which linguists have summarized in four categories, (i) unification of diphthongs or merger of low back vowels (e.g., the pair of words such as *don* and *dawn*, and *stocking* and *stalking*, have no phonological distinction); (ii) presence of phonetic rising or higher vowel at the onset of the diphthong (e.g., the phrase *about the house* would sound something like "*aboot the hoose*" to Americans; (iii) differences in vocabulary, and (iv) conjugation and "*wh*" differences (e.g., *whine*

[4] Historical examples that support the idea that language and culture are inextricably linked. For instance, during the nineteenth century migrants in Bohemia and Hungary learned German and in a few generations their descendants

and *wine* tend to be distinct as such sound still retain an *[hw]* phonetic property. The questions in the survey are designed to capture these speech characteristics in such a manner that allows a great deal of confidence on the objectivity of the responses. While typical questions on vocabulary or differences in verb tenses are asked in a straightforward manner (e.g., what is the past tense of "dive"?) the questions used to elicit the presence of diphthong usage or phonetic rising are somewhat more elaborated as phonetic synonyms are employed (e.g., does news sound like "nyooze" or "nooze"?). While respondents are called upon their own judgment to assess their speech, particularly in the latter regard, objectivity is hardly compromised, as it has been shown that individuals have a very clear sense of what are correct and incorrect ways in which words should be pronounced in their social context (Pinker, 2000). Furthermore, in some survey subsampling, supervisors reported virtually no divergence between the way a particular word was pronounced and the corresponding chosen answer (Chambers, 2000).[5] Table 1 presents the Canadian speech questions included, grouped according to the four basic Canadian English categories described above. A "Canadian English Index" is constructed according to the four categories described above. For each question in each category either a value of zero is assigned when the answer coincides with the characteristic described as more typical of Canadian English speech. A value of one is assigned otherwise. In total, there are 18 questions in the four broad categories considered. They are summarized in an aggregate index, which is merely the simple sum of one-values assigned to each question. To simplify, if a respondent has one, two or three one-values, independently of the questions they come from, the index takes value one. If a respondent has four, five or six one-values, independently of the questions they come from, the index takes value two; and successively. Thus, this index ranges from zero to six for each respondent.[6] The higher the score, the more culturally Canadian the individual is.

A key potential determinant of cultural assimilation is the mobility background of the individual as it captures the extent to which the person has been exposed to a globalized or non-domestic environment. In fact, according to linguists, a critically important variable is the linguistic background of the individual, as mobility may be a leveler of accent and dialect. When

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became German not only in terms of language but in terms of sentiment (McNeill, 1976).

[5] Additionally, other linguists that have used oscillators that test the hertz-frequency pattern of speech to show that again, the response given by individuals coincides with the such patterns described by oscillators (Labov, Ash and Boberg, 2003; Handke, 2000).

[6] This simplification does not affect the empirical results presented below regardless of the econometric method employed.

people from different regions come together, they bring with them numerous differences in the way they talk. This index provides a measure of the subjects' links to the region, where those with lower scores are more representative to the region, while those receiving higher scores are less indigenous to the region. In fact, the questions employed are: (i) *where were you raised from ages 8 to 18?; (ii) Where were you born?; (iii) Where do you live now?; (iv) Where was your father born?; and (v) Where was your mother born?* We closely follow Chong (2006) and Chambers and Heisler (1999) and assign a base score for each respondent of one, determined by the place where the person was raised from 8 to 18.[7] To that score of one, a score between zero and two is added for (i) the place where the respondent was born, (ii) the place where the respondent lives now, and (iii) the place where the respondent's parents were born.[8] I also include individual socio-economic information to match the background information above; in particular, the survey includes the respondent's age, sex, social class, and education. Whereas the variables above are at the individual level, I also employ city-level variables from Statistics Canada (1996, 2001) that are frequently linked with openness and globalization, such as the percentage of immigrants in the city of interest, the percentage of foreign television viewing, and the physical distance of the city to the nearest American border, in this case, Niagara Falls.[9]

In particular, the specification employed is as follows:

$$CEI = \alpha Education + \beta Age + \gamma Gender + \delta Income + \eta White\ Collar + \mathbf{\Pi}\ Globalization + \mu \quad (1)$$

where CEI represents the Canadian English Index variable and **Π** is a vector of proxies typically believed to be related with openness and globalization, such as the percentage of immigrants from the United States to a particular city in the Golden Horseshoe area, television viewing of programs from the United States, and physical distance of cities in the Golden Horseshoe area to the Niagara Falls border (Evans, 2003; Chambers, 2003; Facchini and Mayda, 2006). The definitions of all the variables used are shown in Table 1. Summary statistics are presented in Table 2.

[7] This is considered the crucial formative years for dialect development (Chambers and Heisler, 1999)

[8] If a woman lived in Toronto from ages 8 to 18, then Toronto is the region she represents. She receives 1, and if she was also born there, I add 0. If she lives in Toronto now, I add another zero. If one or both of her parents were born in Toronto, I add zero. Her "mobility index" is 1. In the case of a long-time resident of Toronto who was raised in Montreal from 8 to18 I would add a 2 to his base score of 1. If he was born in Montreal, I add 2 more. If one or both of his parents were born in Peru, I add 2 more. His mobility index would be *7.*

[9] In total, there are 61 cities included in the survey (Statistics Canada, 1991, 2000).

## 3. Findings

Given the characteristics of the dependent variable, we use an ordered probit technique to adequately assess the empirical evidence.[10] The basic results when using the cross-section household data for 1991 are presented in Table 3.[11] As shown in the first column, both years of education and schooling yield negative coefficients that are statistically significant at one percent. That is, the older the individual and the more the years of education, the more Canadian and thus, less *americanized* the individuals become, as measured by their closeness to Canadian English speech. In fact, this is quite consistent with the findings in the linguistics literature (Chambers, 1995).[12] As also shown in this table, gender is not a statistically significant determinant of cultural assimilation, although average household income is. Similarly, the higher the income, the lower the chances that individuals will become culturally similar to Americans when measured by their likeness to Canadian English speech. Interestingly, the fact

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[10] The empirical model follows the following specification:

$$\begin{aligned} &\Pr ob\,(Y_i = 1) = \Phi(\mu_1 - \beta' X) \\ &\Pr ob\,(Y_i = 2) = \Phi(\mu_2 - \beta' X) - \Phi(\mu_1 - \beta' X) \\ &\vdots \\ &\Pr ob\,(Y_i = 6) = 1 - \Phi(\mu_5 - \beta' X) \end{aligned} \tag{2}$$

where $Y_i$ is a random variable indicating the corresponding category of the *Canadian English Index*; and $X$ is a vector of household, regional, demographics, and other characteristics. After some manipulation in order to remove indeterminacy, the log-likelihood can be derived by defining, for each individual, $d_{ij} = 1$ if alternative $j$ is chosen by individual $i$, and 0 if not, for the six possible outcomes. For each $i$, one and only one of the $d_{ij}$*'s* is 1. In particular, the log-likelihood is:

$$\ln L = \sum_{i=1}^{n} \left\{ d_{i1} \ln \Phi(\mu_1 - \beta' x) + \sum_{j=2}^{5} d_{ij} \ln\left[\Phi(\mu_j - \beta' x) - \Phi(\mu_{j-1} - \beta' x)\right] + d_{i6} \ln\left[1 - \Phi(\mu_5 - \beta' x\right] \right\} \tag{3}$$

By manipulation of (2) the marginal effects of he attributes on the corresponding probabilities are:

$$\begin{aligned} &\frac{\partial prob\,(Y_i = 1)}{\partial x_k} = -\phi(\mu_1 - \beta' X)\beta_k \\ &\frac{\partial prob\,(Y_i = 2)}{\partial x_k} = [\phi(\mu_1 - \beta' X) - \phi(\mu_2 - \beta' X)]\beta_k \\ &\vdots \\ &\frac{\partial prob\,(Y_i = 6)}{\partial x_k} = \phi(\mu_5 - \beta' X)\beta_k \end{aligned} \tag{4}$$

Finally, a fit measure may be obtained through the following restricted log-likelihood:

$$\ln L_0 = \sum_{j=1}^{6} n_j \ln\left(\frac{n_j}{n}\right) = \sum_{j=1}^{6} n_j \ln p_j \tag{5}$$

where $p_j$ is the sample proportion of observations corresponding to the particular category.

[11] All the regressions are corrected for potential clustering at the city level. Also, I applied ordinary least squares and simple probit specifications and obtain qualitatively identical results. These findings may be provided upon request.

[12] Furthermore, when we study the specific age effects we find that age becomes a non-statistically significant variable beginning at age 18. Also the older one is, the less significant the educational effect. These findings are remarkably consistent with findings in psychology and linguistics.

that individuals' professional (white-collar or blue-collar) backgrounds do not have a bearing on their English-speaking characteristics may indicate that social status is not a determinant of cultural homogeneity measured by commonality in speech.[13]

Furthermore, the mobility background of the individual yields a negative coefficient that is statistically significant at one percent. Individuals who are closely attached to the Golden Horseshoe area are more likely to show Canadian English features in their speech and thus are less influenced by American culture. Interestingly, physical distance to the border does matter. In fact, the corresponding coefficient yields a positive sign that is statistically significant at one percent. That is, individuals who reside in cities that are farther from the border are less influenced by American culture. This is shown in the second column in Table 3. This finding is somewhat surprising, as one would expect that, in an age of generalized wired and wireless communication, physical contact would become less important as a determinant of acculturation. Not only does this appear not to be the case, but the coefficient of television viewing of programs from the United States, as shown in the third column in Table 3, is only weakly statistically significant. Furthermore, this variable is not robust as demonstrated by the fact that the corresponding coefficient changes sign, as shown in column 7.[14] Along the same lines, column 4 includes the percentage of immigrants from the United States in a determined city in the Golden Horseshoe area. We find that this variable is negative and highly statistically significant at conventional levels. Thus, the higher the percentage of Americans living in Canada, the more American acculturation.

Table 4 provides the corresponding marginal effects for regression shown in column 7 in Table 3. Notice that while the marginal effects on the aggregate Canadian English index is statistically non-significant in the case of television viewing of programs from the United States (column 6) it is statistically significant in the cases when there is actual interaction with individuals from the other side of the border may have occurred, such as individual mobility background, physical distance to the border, and the percentage of immigrants from the United States. Thus, the findings above strongly suggest that, in order for actual acculturation to occur, interaction among individuals matters. This does not occur through television viewing, but

[13] Whereas income is correlated with social status (0.56) its exclusion does not change any of our findings.
[14] In other specifications it yields no statistical significance at conventional levels

through exposure to immigrants from other countries, and actual physical contact with people from other cultures. In short, real contact matters.[15]

We repeat the same exercise by pooling survey data from 1991 and 2000. We use the exact same specifications employed in Table 3 but also add a dummy that equals 1 when the observation comes from the 2000 survey and, as before, we run ordered probits. The findings or our main variables of interest are shown in Table 5.[16] As before, the individual mobility background variable is negative and statistically significant, again suggesting that the more indigenous the individual to the Golden Horseshoe area, the less influenced by American culture as reflected by speech. Furthermore, the farther the distance of the city of residence of the individual with respect to the Niagara Falls border, the less American influence. Also, as before, the percentage of American immigrants to the Golden Horseshoe area does have an impact in terms of the cultural influence in the region, as the corresponding sign of this variable is negative and statistically significant at conventional levels. The results in Table 5 confirm our previous findings, namely that real contact among individual matters. Viewing of American programs does not have a bearing on the acculturation process in the Golden Horseshoe area. This is illustrated by the fact that the corresponding television viewing variable is weakly statistically significant in some specifications and changes sign and becomes insignificant in the most comprehensive specification shown (last column). This is also shown in Table 5. Marginal effects are shown in Table 6. Overall, the results are quite similar to the ones in Table 4.[17]

Finally, endogeneity does not seem to be of particular concern for the variables included in this paper. This, in particular, as the focus of my research is not on language acquisition, and thus, human capital issues, of which has been written extensively, but on the signals provided by language nuances within one language that serve as proxies for cultural assimilation.[18]

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[15] Chambers and Heisler (1999) provide the striking example of a small child who could not speak English even though he was encouraged to watch as much television as possible in order to learn English, as both parents were deaf and mute.

[16] For the sake of economy we do not report the coefficients of the rest of variables included in the regressions, namely, age, education, income (Table 5) as the results are quantitatively identical as those obtained when running cross-section ordered probits for 1991. These findings are available upon request.

[17] We apply formal Levine-Renelt (1992) and Sala-i-Martin (1997) robustness tests and confirm that, in fact, the foreign television variable is statistically not robust. On the other hand, we find that mobility background and physical distance to the border are highly robust variables, while percentage of immigrants is a robust determinant of acculturation.

[18] Still, I applied an instrumental variable approach to potentially endogenous variables, in particular, income (Chong, 2006) using similar instruments as in Knack and Keefer (1997) under the premise that the linking

## 4. Conclusions

Based on existing research in linguistics, psychology, and economics, in this paper we create a Canadian English Index as a proxy for cultural assimilation in order to assess the extent to which a sample of the population in the Golden Horseshoe area in Ontario, Canada has experienced assimilation into American culture. We find that economic and non-economic variables do have a bearing on cultural assimilation. The extent to which individuals move matters, as do physical distance to the border the percentage of immigrants. Interestingly, we find that American television viewing in Canada does not have a robust link with cultural homogeneity in Canada. In short, it appears that some variables usually linked with globalization do have an impact on cultural assimilation, in particular those where actual contact among individuals occurs.

mechanism are related with social capital and trust. The results do not change. These findings are not reported here but are available upon request.

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## Table 1. Definition of Variables

| | |
|---|---|
| Canadian English Index | |
| I. Diphthong Index | The index measures the presence of Yod-Dropping. It includes the following variables: (i) Does news sound like nyooze (0) or nooze (1)?, (ii) Does the u in student sound like oo in too (1), or the u in u (0) ?, (iii) Does the beginning of coupon sound the same as cue (0), or coo (1)?, (iv) Does mom, as in "My mom's gone fishing with my dad" , rhyme with tum (0) or Tom (1)?, and (v) avenue sounds like you (0) or oo (1)? Source: University of Toronto (2000) |
| II. Vocabulary Index | The index measures the usage of words to refer to pieces of furniture, bath accessories and meal accessories. It includes the following questions: (i) What do you call the upholstered piece of furniture that 3 or 4 people sit on in the living room? Chesterfield (1) / Rest (0) , (ii) What do you call the piece of furniture where you keep your socks, underwear, and other clothing? Bureau (1) / other (0), (iii) What do you call the small cloth you use for washing your face? Wash cloth (1) / other (0), and (iv) At meal, people are sometimes given a cloth to wipe their fingers on. What do you call it? Serviette (1) / other (0). Source: University of Toronto (2000) |
| III. Raising Index | The index measure the way of pronunciation and rhyme of some words in Canadian English. The index is formed by the following variables: (i) Does route, as in 'paper route', rhyme with shoot (1) or shout (0)? , (ii) Is the ei of either pronounced like the ie of pie (1) , or the ee of bee (0)?, (iii) Does leisure rhyme with measure (1), or with seizure (0)?, and (iv) In the word tomato do you pronounce the middle part of the word as eight (0), or as at, or as ought (1) ?.Source: University of Toronto (2000) |
| IV. Verbs and WH Index | The index measures the way of usage of some verbs and WH-loss in Canadian English. The index is formed from the following questions (i) Which do you say? He has drank three glass of milk (0) or he has drunk three glasses of milk (1), (ii) Which do you say? Yesterday he dove into the quarry (0) or Yesterday he dived into the quarry (1), (iii) Which do you say? The submarine dived to the floor of the a (1) or The submarine dove to the floor of the a (0), (iv) Do whine and wine sound exactly the same? Same (0) / Different (1), and (v) Do witch and which sound exactly the same? Same (0) / Different (1). Source: University of Toronto, 2000. |
| V. Canadian English index | The Canadian English index is formed by adding up the following indices: (I) Diphthong index, (ii) Vocabulary index, (iii) Canadian Raising index, and (iv) Verbs and WH index. It index ranges from 0 to 18, where higher values represent more culturally close to Canada. To simplify the score is re-scaled from zero to six. Source: University of Toronto (2000) |
| Independent Variables: | |
| Years of Education | Number of years of schooling. Source: University of Toronto, 2000 |
| Age | Age of individual. Source: University of Toronto, 2000. |
| Gender | The variable equals 1 if the Canadian surveyed is female, and 0 if female. Source: University of Toronto, 2000 |
| Mobility Background Index | This variable provides a measure of the subject's links to the region. The index is a function of four main components: (i) the place where the subject was raised from 8 to 18, (ii) the place where the subject was born, (iii) the place where the subject lives now, and (iv) the place where the subject's parents born. The index ranges from 1 to 7, with the best representatives of the region receiving a score of 1 (born, raised, living in the same place as parents), and the poorest representatives receiving a score of 7 (living in the region, but born and raised outside of province). Source: University of Toronto, 2000 |
| White Collar | The variable equals 1 if the subject surveyed performs white collar activities, and 0 otherwise. Source: University of Toronto, 2000 |
| Log Population | Logarithm of population at Census Divisions and Subdivisions level in 1991. Source: Statistics Canada, 1991 |
| Log. Average family income | Logarithm of average family income at Census Divisions and Subdivisions level. Source: Statistics Canada, 1991, 1996 |
| Distance to Niagara Falls | Logarithm of distance from subject's city of residence to Niagara Falls measured in miles. Source: Statistics Canada, 2000 |
| Immigrants from USA | Immigrants from USA as a percentage of Total immigrants at Census Divisions and Subdivisions level. Source: Statistics Canada, 1996 |
| Television Viewing from USA | Percentage of US television viewing time at Census Metropolitan Area level. Source: Statistics Canada, 1991, 1996 |

*Source:* University of Toronto (1991, 2000).

## Table 2. Summary Statistics

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| Canadian English Index | 1606 | 4.58 | 0.95 | 1.00 | 6.00 |
| Years of Education | 1808 | 13.16 | 2.82 | 4.50 | 16.00 |
| Age | 1810 | 31.17 | 18.05 | 16.50 | 85.00 |
| Gender (female=1) | 1808 | 0.38 | 0.48 | 0.00 | 1.00 |
| Mobility Background | 1810 | 3.31 | 1.99 | 1.00 | 7.00 |
| White Collar | 1810 | 0.54 | 0.50 | 0.00 | 1.00 |
| Log Average Family Income | 1804 | 11.02 | 0.17 | 10.70 | 11.49 |
| US Television Viewing (%) | 1804 | 72.54 | 2.99 | 68.20 | 77.10 |
| Log Population | 1804 | 11.25 | 1.90 | 6.52 | 13.36 |
| Log Distance to Niagara Falls (miles) | 1804 | 4.29 | 1.00 | 0.92 | 6.10 |
| Immigrants from USA (%) | 1804 | 0.05 | 0.05 | 0.00 | 0.37 |

*Source:* University of Toronto (1990, 2001) and Statistics Canada (1991, 1996, 2001).

**Table 3. Determinants of Cultural Assimilation**
**Dependent Variable: Canadian English Index**
**Golden Horseshoe, Ontario 1991**

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| Years of Education | 0.0841 | 0.0869 | 0.0843 | 0.0826 | 0.0853 | 0.0855 | 0.086 |
| | (0.0155)*** | (0.0155)*** | (0.0155)*** | (0.0155)*** | (0.0155)*** | (0.0156)*** | (0.0156)*** |
| Age | 0.0345 | 0.0355 | 0.0348 | 0.0351 | 0.0358 | 0.035 | 0.036 |
| | (0.0025)*** | (0.0025)*** | (0.0025)*** | (0.0025)*** | (0.0025)*** | (0.0025)*** | (0.0026)*** |
| Gender (female=1) | 0.0746 | 0.0689 | 0.0655 | 0.0682 | 0.065 | 0.0673 | 0.0766 |
| | (0.0801) | (0.0799) | (0.0804) | (0.0801) | (0.08) | (0.0804) | (0.0803) |
| Log Average family income | 0.7756 | 0.2977 | 0.5652 | 0.5325 | 0.1992 | 0.5456 | 0.2287 |
| | (0.2523)*** | -0.289 | (0.2778)** | (0.2597)** | -0.2874 | (0.2779)** | (0.2863) |
| White collar | 0.0405 | 0.0234 | 0.0269 | 0.0439 | 0.0294 | 0.0287 | 0.0453 |
| | (0.0787) | (0.0789) | (0.079) | (0.0784) | (0.0786) | (0.0791) | (0.079) |
| Log Population | | | | | | -0.0352 | 0.0036 |
| | | | | | | (0.0335) | (0.0382) |
| Mobility Background | -0.0988 | -0.1039 | -0.1011 | -0.0999 | -0.1038 | -0.0993 | -0.103 |
| | (0.0197)*** | (0.0197)*** | (0.0198)*** | (0.0197)*** | (0.0197)*** | (0.0198)*** | (0.0198)*** |
| Log Distance to Niagara Falls | | 0.1266 | | | 0.1025 | | 0.1819 |
| | | (0.0363)*** | | | (0.0381)*** | | (0.0580)*** |
| Television Viewing from the USA | | | -0.0275 | | | -0.0406 | 0.0538 |
| | | | (0.0157)* | | | (0.0207)* | (0.0333) |
| Immigrants from USA | | | | -2.2263 | -1.7307 | | -2.4014 |
| | | | | (0.7806)*** | (0.8138)** | | (0.9110)*** |
| Observations | 839 | 839 | 839 | 839 | 839 | 839 | 839 |
| Wald $Chi^2$ | 260.52 | 268.69 | 263.02 | 266.56 | 272.39 | 261.21 | 274.73 |
| Prob > $Chi^2$ | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Pseudo $R^2$ | 0.139 | 0.1439 | 0.1403 | 0.1434 | 0.1465 | 0.1408 | 0.1484 |

Robust standard errors in parenthesis. * significant at 10%; ** significant at 5%; *** significant at 1%

**Table 4. Determinants of Cultural Assimilation**
**Dependent Variable: Canadian English Index**
**Marginal Effects**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Years of Education | -0.0001 | -0.0038 | -0.0149 | -0.0154 | 0.0269 | 0.0073 |
| | (0.0001) | (0.0009)*** | (0.0029)*** | (0.0032)*** | (0.0051)*** | (0.0015)*** |
| Age | -0.0001 | -0.0016 | -0.0063 | -0.0064 | 0.0113 | 0.0030 |
| | (0.0000) | (0.0003)*** | (0.0006)*** | (0.0007)*** | (0.001)*** | (0.0004)*** |
| Gender (female=1) | -0.0001 | -0.0033 | -0.0132 | -0.0139 | 0.0239 | 0.0066 |
| | (0.0001) | (0.0034) | (0.0137) | (0.0148) | (0.0249) | (0.0071) |
| White Collar | -0.0001 | -0.0020 | -0.0079 | -0.0080 | 0.0142 | 0.0038 |
| | (0.0001) | (0.0035) | (0.0138) | (0.0139) | (0.0248) | (0.0066) |
| Log Average family income | -0.0003 | -0.0100 | -0.0397 | -0.0408 | 0.0716 | 0.0194 |
| | (0.0005) | (0.0125) | (0.0498) | (0.0515) | (0.0897) | (0.0242) |
| Log Population | -0.0000 | -0.0002 | -0.0006 | -0.0007 | 0.0011 | 0.0003 |
| | (0.0001) | (0.0017) | (0.0066) | (0.0068) | (0.0119) | (0.0032) |
| Mobility Background | 0.0002 | 0.0045 | 0.0179 | 0.0184 | -0.0322 | -0.0087 |
| | (0.0001) | (0.0012)*** | (0.0038)*** | (0.0037)*** | (0.0064)*** | (0.0019)*** |
| Log Distance to Niagara Falls | -0.0003 | -0.0080 | -0.0316 | -0.0325 | 0.0569 | 0.0154 |
| | (0.0002) | (0.0029)*** | (0.0104)*** | (0.0107)*** | (0.0184)*** | (0.0052) |
| Television Viewing from USA | -0.0001 | -0.0024 | -0.0093 | -0.0096 | 0.0168 | 0.0046 |
| | (0.0001) | (0.0015) | (0.0058) | (0.0060) | (0.0105) | (0.0028) |
| Immigrants from USA | 0.0035 | 0.1051 | 0.4171 | 0.4288 | -0.7513 | -0.2032 |
| | (0.0027) | (0.0444)** | (0.1590)*** | (0.1688)** | (0.2865)*** | (0.0811)*** |

Marginal effects of specification 7 in Table 3. Robust standard errors in parenthesis. * significant at 10%; ** significant at 5%; *** significant at 1%

**Table 5. Globalization and Cultural Assimilation**
**Dependent Variable: Canadian English Index**
**Golden Horseshoe, Ontario 1991-2000**

| | (1) | (2) | (4) | (3) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| Mobility Background | -0.1103 | -0.1128 | -0.11 | -0.1115 | -0.1129 | -0.1106 | -0.1148 |
| | (0.0155)*** | (0.0155)*** | (0.0155)*** | (0.0155)*** | (0.0155)*** | (0.0155)*** | (0.0155)*** |
| Log Distance to Niagara Falls | | 0.1139 | | | 0.0751 | | 0.1889 |
| | | (0.0296)*** | | | (0.0323)** | | (0.0516)*** |
| Television Viewing from USA | | | -0.0241 | | | -0.0308 | 0.0732 |
| | | | (0.0125)* | | | (0.0153)** | (0.2275) |
| Immigrants from USA | | | | -2.5628 | -2.0432 | | -2.5636 |
| | | | | (0.6524)*** | (0.7046)*** | | (0.7423)*** |
| Observations | 1597 | 1597 | 1597 | 1597 | 1597 | 1597 | 1597 |
| Wald $Chi^2$ | 443.83 | 456.84 | 446.37 | 455.14 | 461.35 | 445.48 | 474.58 |
| Prob > $Chi^2$ | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Pseudo $R^2$ | 0.1259 | 0.1291 | 0.1267 | 0.1304 | 0.1316 | 0.1269 | 0.1333 |

Full specification not shown. Controls not reported are the same ones included in Table 3 for each corresponding column. Robust standard errors in parenthesis. * significant at 10%; ** significant at 5%; *** significant at 1%

**Table 6. Globalization and Cultural Assimilation**
**Dependent Variable: Canadian English Index**
**Golden Horseshoe, Ontario 1991-2000**
**Marginal Effects**

| | (1) | (2) | (4) | (3) | (5) | (6) |
|---|---|---|---|---|---|---|
| Mobility Background | 0.0001 | 0.0027 | 0.0273 | 0.0139 | -0.0256 | -0.0184 |
| | (0.0000) | (0.0006)*** | (0.0038)*** | (0.0022)*** | (0.0038)*** | (0.0026)*** |
| Log Distance to Niagara Falls | -0.0001 | -0.0045 | -0.0449 | -0.0229 | 0.0422 | 0.0303 |
| | (0.0001) | (0.0014)*** | (0.0124)*** | (0.0065)*** | (0.0118)*** | (0.0084)*** |
| Television Viewing from USA | -0.0000 | -0.0117 | -0.0174 | -0.0189 | 0.1163 | 0.1117 |
| | (0.0000) | (0.0007)** | (0.0067)*** | (0.0034) | (0.0062) | (0.0044) |
| Immigrants from USA | 0.0014 | 0.0609 | 0.6099 | 0.3112 | -0.5724 | -0.4110 |
| | (0.0011) | (0.0207)*** | (0.1803)*** | (0.0912)*** | (0.1684)*** | (0.121)*** |

Marginal effects of specification 7 in Table 5. Robust standard errors in parenthesis. * significant at 10%; ** significant at 5%; *** significant at 1%