Labor Income and French-English Bilingualism in the Two Major Ethnolinguistic Groups in the Montreal Metropolitan Census Area : 1970-2000.

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Résumé :

L'évolution du lien entre les salaires et le bilinguisme français-anglais à Montréal est tracée avec des données censitaires. La population visée est composé d'hommes nés au Canada, de langue maternelle française ou anglaise parlant encore cette langue à la maison. Ces hommes ont de 25 à 54 ans, ils sont salariés et pleinement intégrés au marché du travail, au sens classique de ce terme. Cette population forme un cas-type pour l'analyse de l'évolution des inégalités entre francophones et anglophones au Canada. Trois tendances ont été observées dans cette étude. Entre 1970 et 1980, un lien historique entre l'ethnicité, la langue et le salaire a disparu à Montréal. Ce qui a l'air d'une prime au bilinguisme, payée sans égard à l'appartenance ethno-linguistique, est apparu, toujours entre 1970 et 1980. Depuis les années 80, ce pattern est stable.

Abstract

Using census data, we examines the evolution of the links between wages and French-English Bilingualism in Montreal. Subjects are Canadian born males, whose first language is French or English and are still speaking this language at home. They are 25 to 54 Y.O. and gainfully

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employed. Such a population constitutes a test case for the study of changes in inequalities between Francophones and Anglophones in Canada. Three trends were observed in the current study. Between 1970 and 1980, an historical link between ethnicity, language and wages disappeared in Montreal. A premium to French-English bilinguals irrespective of their first language appeared, again between 1970-1980. From 1980 onwards, this pattern has remain stable

JEL Classification Codes : J15, J71

Introduction

Income inequalities between French-Canadians and English-Canadians, Francophones and Anglophones, have played a significant role in the history of Quebec and Canada. Historically and in the Weberian sense of the word, Anglophones, as a collectivity, have held a dominant position in the economy of Quebec. In consequence, English was the major language of use in the secondary and tertiary sectors of the labor market. The causes and consequences of this phenomenon are multiple and have been the bread and butter of numerous analysts. The precise evolution of these inequalities in the recent past remains the object of some debates.

In the 60s and 70s, the presence and behavior of women in the labour market were very different from what they are now. This is the main reason why women are excluded from the present study. A study on the links between labor income and French-English bilingualism including women could and should be done and would likely generate questions never thought of before.

In 1966, André Raynauld, Gérard Marion and Richard Béland publish a study done for the Royal Commission on Bilingualism and Biculturalism and based on the data of the 1961 Census of

Canada. They are among the first in Canada to look into the weight of ethnic origin on labor income after major determinants of income such as education and experience had been controlled. In the Montreal Metropolitan Census Area, they observe a 32 % difference between the income of workers of "French" origin and workers of "British" origin. That difference is the overall difference. Their major finding is that controls on education, experience and a few other variables reduce but do not eliminate that difference. The net difference is in the order of 10 %. For the first time, empirical data analysed by credible scholars hinted at the hypothesis of a systemic discrimination against Francophones in the labor market. In the relatively tense social and political climate of the late 60s, their study received some amount of attention in public opinion and political circles. This at a time when a good many francophone intellectuals in Montreal drew their references in writings about decolonisation in the Third World and in studies on the situation of Afro-Americans in the United States.

Most, if not all, of the subsequent studies on this topic have introduced an additional variable in the equation: bilingualism. Subjects are classified not only according to their ethnic origin but also on their ability to speak both French and English, French only or English only. There are, however, major variations in the ways these studies define the populations to be examined. Some variations are geographical: Canada as a whole, Quebec as a whole, the Montreal Metropolitan Census Area only. Within a given geographical area, other variations concern the workers themselves: all of them or some subset of the workforce.

Most of these studies (e.g. Vaillancourt, 1988) found that the pattern observed by Raynauld et al. in the 1961 data still held in the data from the 1971 census. For example, in 1970, for Quebec as a whole, and all else being equal, unilingual Anglophones still earned about 10 % more than

unilingual Francophones. Most of these studies also found that this pattern had dimished or disappeared by 1981. Some of these studies (e.g. Vaillancourt and Touchette, 2001, Christofides and Swidinsky 1998, p.167) suggest that the pattern had inverted itself by the end of the century.

Yet, the presence in these studies of students, self-employed workers, part-time workers and so on as long as they have some positive labor income in the year preceding the census cast some doubts on some of their results. For instance, anglophone and francophone school attendance rates are still different in Quebec. This does matter, as the determinants of labor income for students are likely not those prevailing in the general population. In addition, many of these studies deal with Quebec as a whole without distinguishing, as we feel is absolutely necessary, between the Montreal MCA and the rest of the province (see Vaillancourt and Touchette, 2001).

The goal of the present study is to re-examine the evolution of income inequalities between Francophones and Anglophones -French Canadians and English Canadians of the 1950-1970's sense of the words-, while taking into account some of the major changes in the nature of the labor market since 1960. Many current features of the market were marginal 40 or 50 years ago. The most obvious one is the presence of women. But one can also think of the propensity of younger workers to go back and forth between school and the world of work. The growing importance of immigrants from the non-industrialised word is another of these changes. Some of these new features have different weights in the anglophone and francophone segments of the Quebec labor market. For example, the proportion of immigrants for the non-industrialised world is more important in the anglophone segment than in the francophone segment. By excluding from this analysis the non-negligible and diversified fraction of the labor force mainly concerned by changes that have taken place since the 60s, we hope to find at the end of the period a labor

market whose overall characteristics are as close as possible to those of the market observed at the beginning of the period. This research strategy insures a greater clarity of the analyses.

Data

All of our data comes from the public use micro data files of the Canadian censuses for 1971, 1981, 1991, 1996 and 2001. These files give researchers easy access to many of the most significant census variables. They do not concern all of the census variables nor all of the census participants. Rather they contain data from a substantial sample of participants. That sample is built by Statistics Canada and gives a very good image of the population from which it is drawn.

A key piece of data for our study concerns the labor income of census participants for the calendar year preceding the census, for example the labor income for the whole of 2000 in the census held in May 2001. The quality of this information is reputed to be good. The conditions under which the information is collected are favourable. Statistics Canada's reputation for confidentiality is high. The census uses self-reporting, which eliminates biases linked to the presence of an interviewer. The census takes place at the middle of May, thus allowing people to refer to their income tax form, which they would have completed sometimes by the end of April. The set of questions on income (questions 51a to 51j in the 2001 census form), from which the data on labor income is derived, is clear and clearly distinguishes wage income from other income.

Still, we are not aware of any studies that systematically would have evaluated the validity of the income data in the Canadian censuses. Taking this data at face value is a matter of tradition in language economic, a tradition to which we conform in the absence of any other choice.

The second critical set of data for our study has to do with the linguistic abilities of the informants. This data is obtained by two questions. The first question has to do with the respondent's mother tongue, that is the first language learned in childhood and still understood. The second question is about the knowledge of Canada's official languages. Subjects are asked whether or not they know French or English "well enough to conduct a conversation" (question 13 in the 2001 census form). The possible answers are: French only, English only, both or neither. The census "bilinguals" are these individuals who, irrespective of their eventual mastery of a language other than French or English, say that they know these two languages. Under these conditions, the person whose mother tongue is, say, Portuguese, and who, of French and English, says that she knows only French is classified as a "French unilingual".

Here again the information is self-reported. The only criterium given to the informant is in the labelling of the question: "to conduct a conversation". All this in a social and political context in which, for some segments of the population, the knowledge or the ignorance of the official languages could be a sensitive matter. One must also keep in mind that the bilingualism measured by the 1971, 1981, 1991, 1996 and 2001 census is of a given type, the oral active one. There are others. One can read a second language without being able to speak it. To speak it without being able to write it. And so on. These other types of bilingualism could be as important as the active oral one. Canadian Censuses data don't reveal much on the qualities and frequencies of these other types.

There have been a few studies on the reliability of the data on the knowledge of the official languages. One of these studies (Albert, 1989) showed that people had a tendency to overevaluate their linguistic abilities. The question "Are you able to conduct a *lengthy* conversation on various subjects in (French, English)?" increases the number of unilinguals when compared to the question used in the census itself. In Quebec, where daily life offers more frequent concrete tests in the matter than elsewhere in Canada, the number of unilinguals increases by 8 % among the Francophones and by 21 % among the Anglophones when the question about lengthy conversations is used (Albert, 1989). But we must note that the population queried by Albert was more widely defined than ours.

In this case as in the case of the income data, we are prisoners of the census. And, like our predecessors, must admit that there are worst jails.

The population

Our objective, in fact, is to reconstitute the population studied by Raynauld et al. in the 1960s. That population was made up of workers of old "French" or "British" stock who were fully and classically integrated into the labor market. At the time, these workers represented the vast majority of workers in the Montreal area.

Our population is made up of:

-men

-born in Canada

-of French or English mother tongue *and* still speaking that language at home

-between 25 and 54 years of age

-who work full-time

-who are wage earners *without* income from self employment

-who earn more than the minimum wage

-who do not attend school *even* on a part-time basis

-who are residents of the Montreal Metropolitan Census Area.

These workers still represent a large majority of the male workforce in the Montreal area.

The Montreal Metropolitan Census Area labor market is an important one. It is the *only* one in Canada where one can find very large numbers of Francophones and Anglophones. It is the *only* one in Canada where one can find, in each of these groups, significant proportions of unilinguals *and* bilinguals. It is also sufficiently distant from Ontario and New England, two English speaking areas, to have its own linguistic dynamics. The choice of the Montreal Metropolitan Census Area as the sole site for this study is a consequence of these linguistic and geographical realities. It must be noted that a comparison with other MCAs is of limited interest. The Toronto and Vancouver MCAs have too few unilingual Francophones. The Ottawa MCA is a special case given the importance of the federal civil service in its labor market (see Beattie, Désy and Longstaff (1972) and Beattie (1975)).

Extending our study to Quebec as a whole, or much worse, to Canada as a whole, would have lead us to ignore a number of local social and cultural differences and realities that an economic study of income inequalities between ethno-linguistic groups in Canada must take into account.

A number of exclusions were made to target a population of workers fully and classically integrated in the labor force. Over the last 30 years (see, for instance, Baudelot and Establet (2000) or Osterman (2001)), a number of changes have taken place in the labor market. These changes are more noticeable among new entrants in the market. Things that were uncommon in 1971 –going back and forth between school and work, working part-time, being self-employed – are more frequent now. The frequency of these phenomena and their different prevalence in the francophone and anglophone segment of the Montreal market have made us retain five criteria.

The first criterium is age: persons less than 25 or more than 54 years old are excluded from the target population of our study. The exclusion of persons less than 25 eliminates a large part of those who, beginning in the 80s, had to deal with perturbations in the labor market that were much less frequent in the 60s and 70s. The exclusion of those aged 55 or more eliminates older workers who, in 1971 or 1981, may have been, in the last phase of their career, beneficiaries of advantages or victims of handicaps present thirty years before, at the beginning of their working lives. Being 20 years old and being French or English Canadian in the Quebec and Canada of 1941 had on the social and economic futures of individuals far greater consequences than today.

Second and third criteria: to work full time and to have a weekly income equal or larger than the minimum wage for the year of reference. In our population, around 90 % of the respondents say that they have worked full time for at least 40 weeks during the year preceding the census. Most of the others probably have entered the labor market during that year. The weekly income level criterium eliminates around 12 % of the potential cases. Many of theses cases could be response errors: people giving their after deductions income rather than their before deductions income as

asked by the census question. There is also, in Quebec, the special case of tip earning workers whose before deduction minimum wage is, by law, lower than the general minimum wage.

The fourth and fifth criteria eliminate residual noise from the equation. We have excluded from our population all those who had, exclusively or in conjunction with a wage income, an income from self-employment. There were few such cases at the beginning of the period. Moreover, the treatment of answers on net income from self-employment is tricky because of variations in the fiscal situations of self-employed workers. Finally, were also excluded all those who, while 25 or older, were still attending school, even on a part time basis. Some of these workers were felt to be different enough from mainstream workers to call for this final adjustment to our population.

All subjects of our study are Canadian born. This excludes a diversified and non-negligible fraction of today work force. There are three reasons for this. The first is the historical dimension of this work. The second is the unequal weight of immigrants in the francophone and anglophone segments of the Montreal labor force. The third is the integration problems specific to migrants.

In 1971, people whose mother tongue was other than French or English made up 14,6% of the labor force in the Montreal market. By 2000, that proportion was 18,1 %. In their large majority (75,9 %), these persons were born elsewhere than in Canada, the United States or the United Kingdom. That they would and do encounter specific integration problems is not hard to imagine.

Furthermore, the proportion of persons born outside Canada is very different among people of French and English mother tongue in the Montreal MCA. Among people of English mother

tongue, from one census to the other since 1971, around 20 % are foreign born. The equivalent proportion among people of French mother tongue is no less than four times lower, at around 5%.

Hugues (1943, p.46-64) observed that most of the plant managers in the medium-sized manufacturing city of Quebec he studied in the late 30s were drawn from Anglophones born in the United States or in the United Kingdom. This observation was also made by other authors (See Dumont 1996, p.3). These men played, until the 70s, a specific and peculiar role in the industrial development of the province (Guindon 1988, p.56). However, the relative importance, in our population, of people born in the U.S. or in the U.K. among the foreign born of English mother tongue decreases from 64,4% in 1971 to 44,8 % in 1981. Since then, it hover around that.

Data illustrating these three last paragraphs will be found in Table A1 of Appendix A.

It is, thus, nearly impossible to precisely reconstitute the population analysed by Raynauld et alii. Yet, at the beginning and at the end of the 1970-2000 period, our population is made of those actors who were the main center of interest of the Royal Commission of Inquiry on Bilingualism and Biculturalism economic investigations, French or English speaking native Canadians gainfully employed. We did add one further refinement by excluding so called linguistic transfer cases. Were included in the population only those who, of French or English mother tongue, declared using that mother tongue at home. This excluded around 3 % of the potential population.

The Results

Our results were obtained by using a multivariate analysis technique first developed by the economist Jacob Mincer (1993) some 50 years ago. This technique allows for the simultaneous control of a number of variables presumed to have an impact on wages: education, experience, number of weeks worked during the year and so on. Our full model is described in appendix B of this article. Further details on the construction of the variables are available in appendix B of the original research report[2]. Multivariate analysis printouts can be obtained by writing to the author.

Our results are robust and interesting.

Those interested by the robustness of the results will find the relevant information in Figure 1 and in Table C1 of the Appendix C of this article. Our explanatory model explains between 39 % to 44 % of the variance of the wages. This is in the usual range for this kind of explanatory model. In Figure 1, one can see that relatively few standardized residuals of our 2000 regression lies outside of the range between 1 and –1, as required by the basic assumptions of linear modeling (See Johnston, 1984, p.169). The clouds of residuals of our 1995, 1990, 1980 and 1970 regression (not shown here) have a similar shape. The spread of the wages does not increases or decreases with increasing values of the years of labor market experience in any of our micro-data samples.

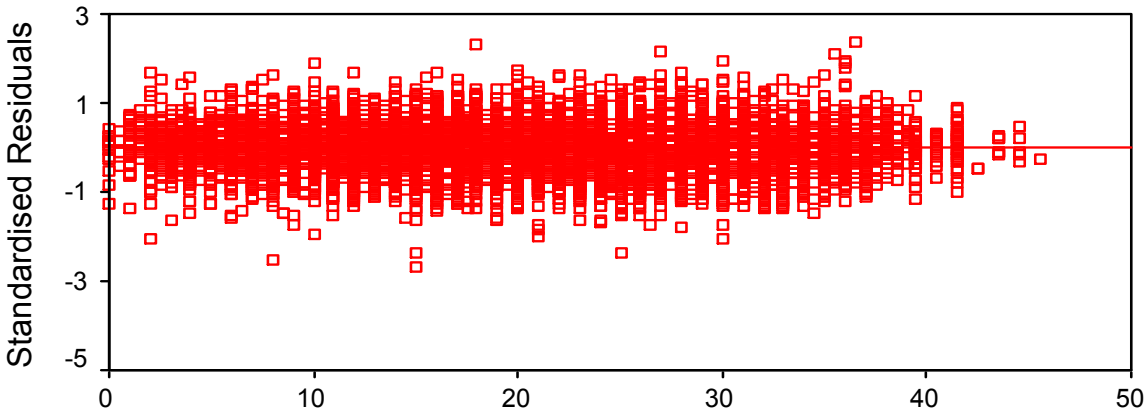
The results are presented in Table 1 and in Figure 2. Table 1 and Figure 2 illustrates three basic trends.

[2] Available at www.cslf.gouv.qc.ca/publications/PubF202/F202.pdf

Figure 1: Standardised Residuals Distribution

by Years of Labor Market Experience, 2000 Regression

Data Used in this Study



N=10052.

Source : Public Use Micro-Data File, 2000 Canadian Census.

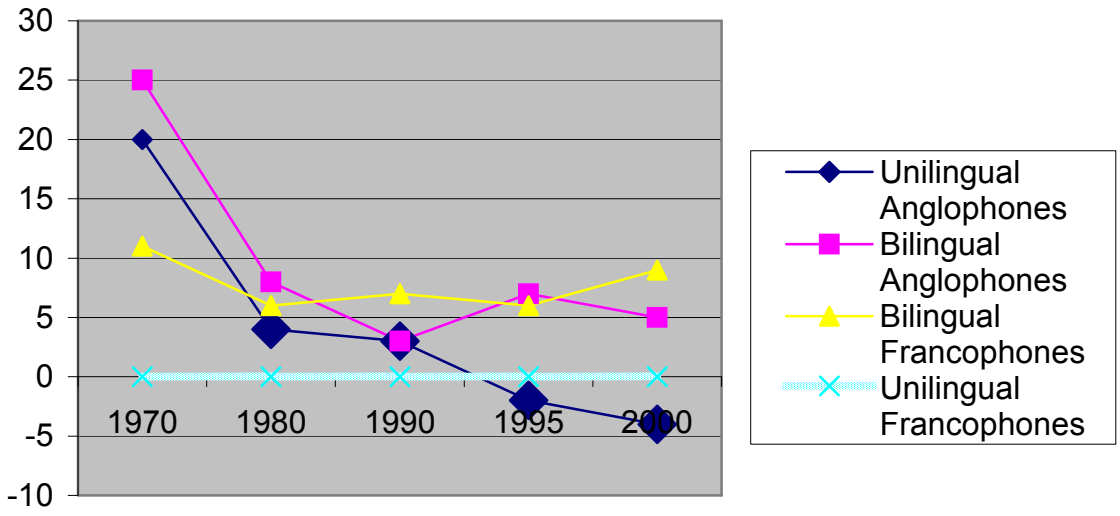
The first trend is the complete disappearance, between 1970 and 1980, of the link, an historical link, between labor income, language and affiliation to the francophone or anglophone community. Table 1 and Figure 2 shows that the situation observed by Raynauld et alii in the 1961 census data still prevailed in 1970. All else being equal (education, experience, marital status, number of weeks worked during the year and so on), male Anglophones, be they unilingual or bilingual, earned on average more than their francophone counterparts. In 1970, a bilingual Anglophone earned 14 % more than a bilingual Francophone. A unilingual Anglophone earned 20 % more than an unilingual Francophone. Given that we are dealing here with males aged 25-54 who are similarly qualified and fully integrated into the work force, these differences are very significant.

Table I : Gaps, all relevant statistical controls done, for the average income of unilingual francophone males, between the average wages of bilingual anglophone and francophone males, Montreal Metropolitan Census Area, 1970-2000

	1970	1980	1990	1995	2000
Unilingual Anglophones	20%	4%**	3 %**	-2%**	-4%**
Bilingual Anglophones	25%	8%	3%	7%	5%
Bilingual Francophones	11%	6%	7%	6%	9%
Unilingual Francophones	BASE 0	BASE 0	BASE 0	BASE 0	BASE 0

****Statistically insignificants gaps.**
Source: Public use census micro-data files, 1971, 1981, 1991, 1996 and 2001 Statistics Canada

Figure 1: Evolution of the gaps with the average income of unilingual Francophones males, all relevant statistical controls done, Montreal Metropolitan Census Area 1970-2000



Base 0 : Unilingual Francophones average salary.
Oversized pointers : statistically insignicant gaps
Source : Public use census micro data files, 1971, 1981, 1991, 1996 and 2001 Statistics Canada

Major changes took place between 1970 and 1980. In 1980, unilingual Anglophones earned on average only 4 % more than unilingual Francophones. Moreover, this difference was not

statistically significant. In the same vein, and as was the case in 1970, bilinguals, in each community, earned more than their unilingual counterparts. What is new is that the gap between the "premium" paid to bilingual Anglophones (8%) and that paid to bilingual Francophones (6%), thus 2%, is so tiny as to be considered non-significant. Even more so when this 2 % gap is compared to the 14 % gap observed in 1970. Thing did change. It is as if, in ten short years, the Montreal MCA labor market had completely revised its rule of remuneration for our population.

This is in fact the second trend: the appearance, always between 1970 and 1980, of a "premium" paid to bilingualism *per se*, irrespective of the first language of the worker.

The third trend is the stability of this pattern. Inequalities that had disappeared between 1970 and 1980 have not reappeared since then. From 1980 onwards, the differences between the earnings of unilingual Francophones and unilinguals Anglophones are in the order of 2 % to 4 % and are not statistically significant. In practice, they are gone. Bilinguals, Anglophones and Francophones, earn more than unilinguals in 1980, 1990 1995 and 2000. A little more only, but enough to indicate the reality of a "premium" to bilingualism. The difference between the premium paid to bilingual Anglophones and bilingual Francophones has become, since 1980, small enough to be socially meaningless. It is either statistically insignificant, as in 1980 and 1995, or tiny enough, as in 1990 and 2000, to be possibly due to a deficient labelling of the census question on the knowledge of Canada official language. For Francophones and Anglophones, the Montreal MCA linguistic ability market work as it should in a liberal economy.

A note before concluding. Our results run counter to the beliefs held by many on the economic value of bilingualism for Anglophones in the Quebec of the post-war period. Table 1 and Figure

2 show that the knowledge of French as a second language was a marketable asset in 1970 for Anglophones workers. Bilingual Anglophones earned 5 % more, on average, than unilingual Anglophones. It must be noted, however, that the premium paid to bilingualism varied greatly with the first language of the worker in 1970. A bilingual Francophone worker earned 11 % more than a unilingual Francophone. This 6 % (11%-5 %) difference suggest that English was still, at the beginning of the 70s, the major language of use in the secondary and tertiary sector of the labor market in Montreal. By 1980, both French and English were major language of use at work.

Conclusion :

This study analysed the evolution, between 1970 and 2000, of the links between ethnolinguistic affiliation, bilingualism and labor income in a population of French and English native Canadians workers fully integrated into the Montreal area labor market, the main market of contact between these two groups in Quebec and Canada since the beginning of the industrialisation of Montreal.

The study notes a major change. In our data, this change occurs between 1970 and 1980 but this could be but the end phase of a much longer evolution that started at the beginning of the twentieth century. Still, between 1970 and 1980, a clear and historical association between ethnolinguistical affiliation and labor income disappears. Such an association should not have been found in a "modern" labor market in which income is a function of formal qualifications such as work experience and schooling. Forty years after the publication of the pioneer study by Raynauld, Marion and Béland, these data show the importance of the 70s in the history of Quebec and Canada. Rapid and considerable changes took place. Real and deep socioeconomic inequalities between Francophones and Anglophones that played a vital role in the political and

socio-economic history of Quebec and Canada disappeared during that decade, in little less than 10 years in Montreal, all this without negatively affecting the position of Anglophones workers.

The study, we believe, also show that the new rules of remuneration have become a permanent characteristic of the Montreal MCA labor market. Since 1980, a new and stable pattern emerged. We now have a labor market in which, all else being equal, 1) equally qualified unilingual Francophones and unilingual Anglophones are paid statistically equal wages. It must be noted, however, that there is a significant increase in the proportion of bilinguals and a corresponding decrease in the proportion of unilinguals among the Anglophones in the Montreal MCA between 1971 and 1996. In our population of 25- to 54 Y.O gainfully employed Anglophones workers, the proportion of bilinguals goes from 44,2 % at the beginning of the period, in 1971, to 75,5 % at the end, in 2000. We now have, as well, a market in which 2) bilinguals are better paid than unilinguals and equally better paid or paid almost the same irrespective of their first language. Whether the labor income of bilinguals Anglophones and Francophones workers are equal or almost equal nowadays in the Montreal MCA is a question we cannot settle here, as Canada Censuses data contain few if any usable information's on the types and qualities of bilingualism.

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Appendice A

Table A: Salaried Labor Force
by Mother Tongue and Some Place of Birth
Montreal Metropolitan Census Area 1971-2001

Table A1: Distribution by Mother Tongue 1971-2001 (%)

YEARS	FRENCH	ENGLISH	OTHER
1971	65.1	20.1	14.6
1981	69.2	15.9	14.8
1991	70.6	11.8	16.8
1996	70.9	11.3	17.2
2001	71.1	10.8	18,1

Table A2: Proportion of persons born outside Canada
by Mother Tongue 1971-2001

YEARS	FRENCH	ENGLISH	OTHER
1971	5,1	22,3	87,3
1981	5,6	26,1	80,6
1991	4,1	18,7	82,3
1996	4,1	18,6	77,8
2001	4,5	18,3	75,9

Table A3: Proportion of persons born
in the United States or in the United Kingdom
Among the English Mother Tongue
Persons Born Outside Canada 1971-2001

YEARS	(%)
1971	64,4
1981	44,8
1991	46,7
1996	43,9
2001	45,9

Population: Males, aged 25-54 years old, wage earners without income from self employment, who earn more than the minimum wage, who do not attend school even on a part-time basis, residents of the Montreal Metropolitan Census Area

Source : Public use micro data files of the Canadian Censuses for 1971, 1981, 1991 1996 and 2001, Statistics Canada

Appendice B

Econometric Model

Economists studying the relation between labor income and bilingualism use models and multivariate analysis techniques developed by the economist Jacob Mincer (1993). In Quebec and Canada, polytomic variables for languages abilities and ethnicity are introduced into the models. Our equation is similar to the one of Vaillancourt (1988) and Christofides and Swidinsky (1998).

$$\text{Ln } Y_t = ß_1 C + ß_2 \text{EDUC} + ß_3 \text{EXP} + ß_4 (\text{EXP})_2 + ß_5 \text{Ln WEEKS} +$$

$$+ ß_6 \text{MARITAL STATUS} +$$

$$+ ß_7 \text{LANGUAGE Bilingual Francophone} +$$

$$+ ß_8 \text{LANGUAGE Unilingual Anglophone} +$$

$$+ ß_9 \text{LANGUAGE Bilingual Anglophone} + \mu_t$$

Where

t is the time period.

Y is the wage income of the worker.

Ln Y is the logarithm of the wage income.

EDUC is the highest level of schooling of the worker.

Six levels are retained: Grades 1 to 8 (omitted category), Grades 9 to 10, Grades 11 to 13, University (1^{st} and 2^{sd} years, 3^{rd} and 4^{th} years, 5^{TH} year and more).

EXP is the labor market experience at date t (in years).

WEEKS is the number of weeks worked for pay.

Ln WEEKS is the logarithm of WEEKS.

MARITAL STATUS is the “de facto” conjugal status.

The worker is either Never Married (Omitted Category), Married, Widowed or Divorced.

LANGUAGES identify the linguistic abilities and the ethnic identity of the worker. In our equation, this polytonic variables has four values, namely: unilingual Francophone (omitted category), bilingual Francophone, Unilingual Anglophone, Bilingual Anglophone.

C is a constant and μ_t is a stochastic errors term.

Appendice C

Table C1 : Regression results Dependant variables: Labor Market Wages (Logarithm) 1970, 1980, 1990, 1995					
Coefficients (Standard deviation)	**1970**	**1980**	**1990**	**1995**	**2000**
Constant	4.667	5.492	6.164	6.232	6.48
Labor market Experience	0.041	0.03	0.027	0.028	0.032
Labor market Experience (Squared)	-0.0007	-0.0005	-0.0004	-0.0004	-0.0005
Education (1)					
High school 9 to 10 years	0.116	0.071	0.135	0.078	0.078
High school 11 to 13 years	0.23	0.224	0.277	0.222	0.246
University, 1 to 2 years	0.34	0.379	0.409	0.33	0.413
University, 3 to 4 years	0.627	0.529	0.607	0.544	0.654
University 5 years or more	0.709	0.694	0.773	0.699	0.738
Linguistic attributes (1)					
Unilingual Anglophones	0.182 (0.031)	0.041 * (0.026)	0.0248 ** (0.026)	-0.0271 *** (0.032)	-0.0401 **** (0.034)
Bilingual Anglophones	0.227 (0.034)	0.079 (0,020)	0.036 (0.017)	0.0542 (0.019)	0.0519 (0.019)
Bilingual Francophones	0.107 (0.020)	0.056 (0.012)	0.0726 (0.010)	0.0671 (0.011)	0.0857 (0.011)
Marital status (1)					
Separated, divorced, widow	-0.195	-0.093	-0.08	-0.115	-0.076
Single	-0.285	-0.276	-0.271	-0.274	-0.211
Number of weeks worked per year (logarithm)	0.917	0.977	0.923	0.939	0.879
R Square	0.428	0.488	0.446	0.448	0.388
F (q)	172 (13)	439 (13)	650 (13)	606 (13)	491 (13)
Population (N)	2966	5962	10485	9686	10052

* P= 0,118; ** P=0,344 *** P=0.404 ****P=0.239

(1) Dummy variables: for testing whether the effects of an attribute on wages are significantly different from the effects, standardised to zero, of an unrepresented reference attribute.

Reference class Education : primary schooling 1 to 8 years
Reference class Linguistic Attribute : unilingual Francophones
Reference class Marital Status : Married males.

Source : Public use micro data files of the Canadian Censuses for 1971, 1981, 1991 1996 and 2001, Statistics Canada