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AND THE MARKET FOR LANGUAGE  
SKILLS IN CANADA

by

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**WAGE DIFFERENCES BY LANGUAGE GROUP AND THE  
MARKET FOR LANGUAGE SKILLS IN CANADA**

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WAGE DIFFERENCES BY LANGUAGE GROUP AND THE  
MARKET FOR LANGUAGE SKILLS IN CANADA

I. Introduction

Language issues have been a dominant political concern in Canada for many years. At the centre of this controversy have been policies supported by the federal government intended to encourage the use of French in English Canada and policies of the Quebec government to reduce the use of English in that province. Although other issues also affect attitudes toward national unity and Quebec separation, the question of who should speak which language where is central to Canada's continued existence as a country.

Central to this question is the question of economic disparity between language groups. As the Royal Commission on Bilingualism and Biculturalism (1967, Vol. 3, p. 3) observed over a decade ago, "Formal linguistic equality is of little importance to those living under a system that always places them in inferior social and economic conditions. Such a partnership is not only unequal, but may in the long run imperil Confederation." This paper will attempt to estimate the size and sources of wage differences between language groups in Canada.

Considering the importance of wage differences among language groups to such crucial policy issues, the scarcity of studies on this subject is surprising. The studies that do exist have often examined ethnic groups rather than language groups, or have not controlled for differences in education and other factors. Using 1961 Canadian Census data, the Royal Commission on Bilingualism and Biculturalism (1967, Vol. 3, p. 21) found that nationally, bilingual men of British ethnic origin had the highest

average incomes, followed by monolingual British men, bilingual French origin men, and monolingual French men. However, in Quebec the monolingual British receive more than the bilingual British. The Commission did not control for ethnic differences in education or location, though it did present data showing that groups with high incomes also had the most schooling.

Using the same data source for Montreal, Lieberman (1970, pp. 167-75) also found that British origin monolinguals had the highest incomes, followed by British origin bilinguals, other origin men who spoke both official languages, French bilinguals, French monolinguals, and at the bottom, men who spoke neither official language. No attempt was made to estimate how much of the income differences were due to educational differences.

Boulet (1979) analyzed data on Montreal from the 1961 and 1971 Censuses and from an unpublished 1978 survey. In contrast to the Royal Commission and Lieberman, Boulet (p. 13) found that bilingual English workers had the highest earnings in 1961, followed by monolingual English workers, bilingual French workers, bilingual workers with other mother tongues, others who spoke English, monolingual French workers, and other workers who knew French.<sup>1</sup> The ranking was virtually unchanged in 1971, though the percentage differences between English and French native speakers had narrowed somewhat. By 1978, however, all three bilingual groups earned more than monolingual English, and the percentage difference between monolingual English and monolingual French had narrowed considerably.

Vaillancourt (1978) compared incomes in Quebec in 1961 and 1971 by ethnic and language group. He found the same ranking for both years that Lieberman reported for 1961: monolingual English, bilingual English,

bilingual French, monolingual French. However, the French-English differences narrowed appreciably between 1961 and 1971. Vaillaincourt attributed this to the greater rise in years of schooling among the French than among the British, and to the increased economic importance of government and semi-governmental employers, who encourage the use of French more than private employers.

Two other studies used 1971 Census data to examine earnings across Canada. Kuch and Haessel (1979) concentrated on ethnic rather than language differences. However, they found that bilinguals earned significantly more than monolinguals, after controlling for differences in ethnicity, education, experience, and other factors. They also found that ethnic French men earned less than ethnic British men, other things equal.<sup>2</sup> Finally, Gunderson (1979) also used 1971 Census data to analyze earnings differences between public and private sector workers. For workers of both sexes in both sectors, he found that monolingual French workers earned substantially more than workers who spoke neither official language, but substantially less than monolingual English workers. Differences between bilingual workers and monolingual English speakers were small and insignificant after other factors were held constant.

This paper will examine wage differences among language groups in both French and English Canada. The next section analyzes factors affecting the supply of and demand for language skills and discusses implications for wage differences by language group in different parts of Canada. The third section discusses differences among language groups in wages, education, and age. The fourth section presents estimates of wage differences holding other factors constant, while the fifth section examines the importance of

these other factors. A discussion of the political implications of these findings concludes the paper.

## II. The Market for Languages

Knowledge of a language can be considered a type of human capital. The supply of this skill can come from several sources. The first is from native speakers who learn the language as children from their families. Although children are not making a choice based on economic considerations, their parents may be making an investment decision for them by speaking the dominant language of their community instead of their own mother tongue. An example would be immigrants to Canada who make an extra effort to speak English at home instead of Italian or Polish.

The second source of language skills comes from individuals who make the investment in order to enjoy higher consumption. Although there may be a few individuals who actually enjoy the process of learning languages, the desire to speak with locals on foreign travels or to read literature in the original is undoubtedly a more significant motive. Perhaps more important, especially in Canada, are those who learn the language of the community around them in order to have access to a wider range of private and public stores and services. Also in the category of people who invest in order to have higher consumption are those who learn languages in order to enter special occupations, even though they will not earn monetary rewards. Examples include Catholic priests, rabbis, and university language scholars.

The final source of supply is from people who learn a second language in order to earn more money. Like any other human capital investment, the benefits in terms of higher wage rates must outweigh the costs in time, effort, and perhaps money of acquiring this type of knowledge. The more

different the language is from the individual's mother tongue, the more costly it will be to acquire the skill of speaking it, and the steeper the supply curve. The lower the benefit in learning it, the smaller will be the number of speakers.

The market demand for knowledge of a particular language depends on the economic power of people who speak only that language. If such people constitute the vast majority of the local population, the demand will be high. If they are rich foreign tourists in an area where tourism is important, the demand may also be relatively large. If they are relatively poor immigrants who constitute only a small minority of the population, the demand will be small. However, if the language minority is rich, especially if their language is also that of economically powerful foreign capitalists, purchasers of exports, or government officials from other regions of the country, then the demand may be high.

In general, the wage rate is the price of a unit of labour, determined by the intersection of supply and demand curves for labour. The wage premium paid for knowledge of a language thus depends on both its supply and demand. If there were two language groups equal in numbers and economic power, there would be a certain demand for workers who could speak both languages. Since learning a second language is costly, a wage premium for bilingualism would exist to induce such investment. If investment costs were equal for both language groups, this premium would be equal for both groups and the numbers of each group learning the language of the other would also be equal.

Suppose, however, that the two groups were not equal in numbers or in economic power. Then minority groups workers could gain access to a larger number of jobs, especially better paying jobs, by learning the majority



language. In doing so they automatically become bilingual, and can fill most or all of the demand for bilingual workers. Thus the wage premium received by bilingual minority workers over monolingual minority workers includes both the premium for bilingualism and the premium for having access to the majority labour market.

Majority workers, on the other hand, receive only the bilingual premium. There will be few if any jobs in the minority labour market which would pay more than majority labour market jobs. The only advantage to learning the minority language would be to obtain the wage premium for jobs requiring knowledge of both languages. For majority workers, this premium may be small or nonexistent if the supply of bilingual minority workers trying to enter the majority labour market is large.

If the two language groups are not equal, therefore, we should expect to observe a large wage premium for minority workers who are bilingual, and a small or zero premium for majority workers who invest in a second language. The number of bilingual minority workers should be large, and the number of bilingual majority workers relatively small. It should be emphasized that equality between language groups is not a matter of simple numbers, but of the relative economic power that may come with differences in income or connections with outside economic agents.

In applying these points to Canada, a distinction must be made between Quebec and the rest of the country (hereafter called English Canada in spite of sizeable French speaking minorities in New Brunswick and some parts of Ontario). In English Canada, the vast majority of economic power is in the hands of native English speakers. We would therefore expect workers with other mother tongues to receive a wage premium for learning English, but not

vice versa. This is likely to be as true for French as for Italian, though government policies may increase the demand for the former and produce a wage premium for knowing French.

In Quebec, especially in Montreal, there are three language groups, the French, the English, and others. The French constitute a large majority of the population, but the English have a disproportionate share of economic power, primarily because they speak the same language as capitalists, tourists, and traders from English Canada, the U.S., and Britain. Native speakers of other languages are neither numerous nor rich. These considerations suggest that "Others" will receive a wage premium for learning either French or English, and that the French may be rewarded for learning English. If the larger numbers of native French speakers, or their control over local and provincial government, balance to some extent the better ties of native English speakers to the rest of North America, the latter may also be rewarded for learning French. Among workers who speak only one language, other things equal, English monolinguals should receive the highest wage, followed by French monolinguals, and at the bottom should come monolinguals of other languages.

### III. Wage Differences Among Language Groups

The 1971 Canadian Census asked respondents their mother tongue and their ability to carry on a conversation of some length on various topics in English and French. From this information, eight language groups were defined: monolingual English speakers, monolingual French speakers, and monolingual speakers of other languages who spoke neither official language; native English speakers who also spoke French (bilingual English), native French speakers who also spoke English (bilingual French), and native speakers of other languages who spoke both English and French (bilingual other); and

others who spoke only English (other English) or only French (other French).<sup>3</sup>

Because demand for language skills varies with the size of language groups in the area and the importance of corporate headquarters, all calculations were done separately for five areas: Montreal, Quebec, Toronto, English Canada, and all of Canada. To focus on rewards to language skills rather than on differences among language groups in labour supply or nonlabour income, the hourly wage rather than annual earnings or income was the variable studied. The study was also limited to men between 18 and 64 who worked more than 34 hours per week and more than 26 weeks per year, who received earned income, who were not full-time students and who were not self-employed.<sup>4</sup>

Table 1 presents averages for this sample, by language group and location, for years of schooling, age, and wage, calculated from the Individual file of the 1971 Canadian Census.<sup>5</sup> Although levels differed somewhat across the country, the pattern of relative age, education, and wage rates by language groups was quite similar in all parts of Canada. Monolingual French speakers tended to be slightly younger and workers speaking neither official language were slightly older than the other groups, but in general the age differences were small.

Wage and education differences, however, were substantial. Compared to the monolingual English nationally, the monolingual French had 2.7 years less of schooling, the bilingual French had 0.2 years less, the bilingual English had one year more, and the other English group had two years less. Relative wage rates were similar. The wage of the monolingual French nationally was 73 percent of the monolingual English wage, the bilingual French wage was 93 percent, the bilingual English wage was 109 percent, and the other English wage was 88 percent.

Table 1

Mean Age, Education, and Wage Rates by Language Group and Area

	Monolingual English	Other English	No Official Language	Monolingual French	Other French	Bilingual French	Bilingual English	Bilingual Other	Total
<b>Montreal</b>									
Age	39.9	40.0	42.7	36.3	40.6	38.4	39.6	38.9	38.4
Education	11.6	9.5	5.6	8.1	6.5	10.4	11.6	9.2	10.0
Wage	\$4.71	\$3.08	\$2.09	\$3.05	\$2.88	\$3.87	\$4.69	\$3.32	
Percent	13%	3%	1%	23%	2%	42%	13%	3%	
<b>Quebec</b>									
Age	39.9	42.1	45.3	36.6	37.3	37.7	39.7	35.9	37.9
Education	10.9	8.7	5.7	7.9	6.5	10.8	11.6	11.4	9.4
Wage	\$4.06	\$3.54	\$2.20	\$2.88	\$3.17	\$3.72	\$4.49	\$3.27	
Percent	8%	1.5%	0.9%	40%	0.6%	37%	10%	2%	
<b>Toronto</b>									
Age	39.0	38.8		40.2			37.0		38.9
Education	11.2	8.8		6.0			12.3		10.7
Wage	\$4.41	\$3.50		\$2.98			\$4.58		
Percent	74%	15%		4%			7%		
<b>English Canada</b>									
Age	38.6	38.4	39.3	36.3	38.1	37.6	36.9	37.4	38.8
Education	10.6	8.7	5.2	6.1	5.7	8.5	11.6	12.4	10.4
Wage	\$3.97	\$3.49	\$2.80	\$3.17	\$3.15	\$3.62	\$4.21	\$6.15	
Percent	81%	8%	1%	0.8%	0.3%	3%	6%	0.3%	
<b>Canada</b>									
Age	38.6	38.6	40.8	36.6	38.1	37.7	38.0	36.3	38.5
Education	10.6	8.7	5.3	7.9	5.7	10.4	11.6	11.7	10.1
Wage	\$3.97	\$3.50	\$2.65	\$2.89	\$3.15	\$3.71	\$4.31	\$4.08	
Percent	61%	6%	1%	12%	0.3%	12%	7%	0.8%	

The analysis above suggested that the pattern of wage differentials should vary according to the linguistic characteristics of the local labour market. Although both wages and education tended to be higher in Toronto, Montreal, and Quebec than in the rest of Canada, it is not clear from Table 1 that relative wages vary in the predicted fashion. Since relative wages and relative education were highly correlated, regression analysis is necessary to say how much of the wage differences were due to educational differences--or perhaps differences in other characteristics--and how much reflect premia for language skills.

It is clear from Table 1, however, that local linguistic characteristics affect bilingualism. In Montreal, 64 percent of native French speakers were bilingual, but in Quebec as a whole, only 48 percent were. The percentage bilingual in the rest of the province, away from the corporate headquarters which reward English speakers, was only 35 percent. By contrast, 49 percent of Montreal's native English speakers were bilingual, but 67 percent were in Quebec outside Montreal. In English Canada, where there is little demand for knowledge of French, only seven percent of native English speakers were bilingual, but over 75 percent of native French speakers were.<sup>6</sup>

#### IV. Wage Premia for Language Skills

To separate the effect of language on wage rates in different parts of Canada from the effects of other variables, regressions were run for Montreal, Quebec, Toronto, English Canada, and all of Canada with the log of the hourly wage as the dependent variable.<sup>7</sup> Men were included in the regression samples according to the same criteria used in the calculation of the means in Table 1. The independent variables included years of school completed, experience (equal to age minus education minus six), experience squared, and dummy variables for language categories and five immigration

categories. For the provincial and national regressions, dummy variables also identified men who lived in cities over 30,000, in rural nonfarm areas, and on farms. Dummies for regions were also included where appropriate. The reference group was monolingual English speaking natives of native parents. Towns under 30,000 and Ontario were the location reference categories. Education and experience are standard human capital variables. Nativity and the period of immigration were also included to hold constant differences in country specific human capital other than language skills. The location variables were included to capture differences in price levels and labour market demand in different areas.

Table 2 presents estimates of coefficients for the five wage regressions. The pattern of language coefficients generally supports the hypotheses suggested above, though there are some unexpected findings. In Montreal the group receiving the lowest wage rate, other factors constant, were workers who spoke neither official language. Investing in English increased their wage considerably, but investing in French increased the wage by far more. However, learning both English and French resulted in a wage only slightly higher than that obtained by other workers who knew only French.

Monolingual French workers in Montreal earned slightly less than the other French category, but significantly less than monolingual English workers, the reference group in the wage regressions. However, unlike bilingual others, learning English increased the wages of French native speakers substantially, though not to the level of English speakers.<sup>8</sup> As with results of other studies cited above, native English speakers who spoke French earned less than monolingual workers, though the difference was not statistically significant.

Table 2

Wage Regressions

	Montreal	Quebec	Toronto	English Canada	Canada
Education	.059 (.002)	.056 (.002)	.053 (.002)	.056 (.001)	.056 (.001)
Experience	.047 (.002)	.045 (.001)	.045 (.002)	.043 (.001)	.044 (.001)
Exper. Sq./10 <sup>3</sup>	-.000746 (.000040)	-.689 (.028)	-.000727 (.000038)	-.692 (.017)	-.688 (.015)
Native of Foreign Par.	.031 (.029)	.063 (.023)	.038 (.019)	.022 (.008)	.025 (.008)
Immigrant Pre 1946	-.002 (.056)	.008 (.044)	.015 (.036)	-.046 (.017)	.037 (.016)
1946-59	-.040 (.031)	-.033 (.026)	.0076 (.019)	.011 (.011)	.006 (.010)
1960-69	-.136 (.035)	-.125 (.030)	-.039 (.022)	-.031 (.014)	-.045 (.013)
1970-71	-.475 (.113)	-.291 (.117)	-.447 (.069)	-.344 (.042)	-.330 (.039)
Language Monolingual English					
Other English	-.254 (.050)	-.197 (.043)	-.102 (.022)	-.083 (.014)	-.090 (.013)
No Off. Lang.	-.363 (.078)	-.281 (.062)		-.100 (.030)	-.134 (.027)
Monolingual French	-.161 (.028)	-.173 (.022)	-.102 (.039)	-.054 (.043)	-.123 (.013)
Other French	-.142 (.060)	-.165 (.056)			-.157 (.049)
Bilingual French	-.075 (.025)	-.072 (.021)		-.015 (.017)	-.026 (.011)
Bilingual English	-.030 (.029)	.015 (.024)	.010 (.025)	.004 (.013)	.019 (.011)
Bilingual Other	-.128 (.050)	-.123 (.042)		-.059 (.049)	-.106 (.030)
Size Cities over 30,000		.016 (.013)		.059 (.008)	.048 (.007)
Towns under 30,000					
Rural Nonfarm		-.148 (.019)		-.078 (.010)	-.095 (.009)
Farm		-.318 (.038)		-.359 (.020)	-.355 (.017)
Region British Columbia				.036 (.009)	.035 (.009)
Prairies				-.133 (.008)	-.136 (.008)
Ontario					
Quebec					-.051 (.010)
Maritimes				-.215 (.011)	-.217 (.010)
Constant	.138	.168	.236	.176	.179
R <sup>2</sup>	.21	.23	.20	.23	.23
Nobs	5355	10289	5653	27757	38046

Note: Standard errors in parentheses.

Lieberson (1970, p. 172) and others have suggested that the higher wages and earnings of English monolinguals compared to English bilinguals and perhaps native French speakers may be the result of a higher percentage of migrants from other parts of Canada among the English monolinguals. Like other migrants, these men may have more ability or motivation than nonmigrants. Or they may move to Montreal specifically to take well paying managerial and technical positions which do not require knowledge of French.

To test this hypothesis, a second wage regression was estimated for Montreal including only those workers who were born in Quebec. The coefficients and standard errors were  $-.115(.034)$  for monolingual French workers,  $-.019(.032)$  for bilingual French, and  $.022(.039)$  for bilingual English. For this restricted sample, the difference between monolingual French and English was somewhat smaller than for the full sample, but still large and significant. However, the bilingual French coefficient was no longer significant, and the bilingual English coefficient was positive, though not significant.

The Montreal and Quebec coefficients were very similar. Since slightly over half the workers in Quebec live in Montreal, the Quebec coefficients reflect an average of the rewards to characteristics obtained by Montreal workers and by those living elsewhere in the province, mainly in rural areas and towns under 30,000. When a regression was run excluding all workers in cities over 30,000 (limited to native French or English speakers because of the small number of observations for the other language groups), the coefficients were:  $-.097(.043)$  for monolingual French,  $.028(.044)$  for bilingual French, and  $.049(.055)$  for bilingual English.<sup>9</sup> Thus the relative position of English monolinguals was lower outside cities, but monolingual French workers still



earned significantly less and bilingual workers did not earn significantly more than the monolingual English reference group.

In Toronto, as in French Canada, workers speaking neither official language received the lowest wage, both before and after adjusting for other factors. Surprisingly, learning English did not increase their wage at all. The coefficients of the no official language and other English groups were identical to three decimal places. Workers who spoke both official languages, who in Toronto were overwhelmingly native English speakers, earned marginally more than monolingual English workers, though the difference was not significant. This suggests that there is a premium paid for speaking English fluently in Toronto, but little advantage in speaking both English and French or in speaking English poorly.

In the English Canada sample there were enough observations on native French speakers to distinguish between them and the other groups. Although the coefficients on monolingual French and bilingual French were negative, they were not significant and were considerably smaller than in the Quebec and Montreal regressions. The percentage of monolingual and bilingual French workers in English Canada was too small to attach much importance to this comparison. Nevertheless, it is curious that the wage difference between French and English native speakers outside Quebec was smaller than the difference in that province.

When observations from labour markets throughout Canada were pooled in a single regression, the language coefficients were a complicated weighted average of the coefficients from the regional regressions. They indicate that, holding other factors constant, the monolingual French and the three other groups earned significantly lower wages than the remaining groups. As

in the regression for English Canada, bilingual English workers earned the most, followed by monolingual English and bilingual French, but differences nationally among these three groups were small and insignificant.

The coefficients on the other variables in the wage regressions, shown in Tables 2 and 3, are also of some interest. The effects of education, experience, and experience squared were similar in different parts of the country and similar to those in other wage studies. Very recent immigrants earned far less than immigrants who have been in Canada for some time. Immigrants who have lived in Canada for more than a decade generally earned higher wages than native born Canadians of native parents, though the differences were not always significant. However, native children of immigrants earned significantly more than the children of natives.<sup>10</sup> These results suggest that the speed of adjustment to Canada is very rapid, at least for immigrants from English speaking countries.

In the Canada and English Canada regressions, the regional coefficients indicate that large wage differences exist across the country even after education and other factors are held constant. The highest wage levels were in British Columbia. Wages in the Prairies and Quebec, and especially in the Maritimes, however, were far lower in 1971 than in the two most prosperous provinces. Living in the countryside also had a sharp negative effect on wages. Census data unfortunately did not identify residents of large cities, but the wage differences between workers in cities over and under 30,000 were relatively small and insignificant.

## V. Sources of Wage Differences

The language coefficients presented in Table 2 measure the residual wage differences between language groups, holding other factors constant. To measure the contributions of these other factors to wage differences among language groups, the statistic

$$\beta_{jk}(X_{ejk} - X_{ijk})$$

was calculated.  $\beta_{jk}$  is the coefficient of the  $k^{\text{th}}$  variable in the  $j^{\text{th}}$  regression, and  $X_{ejk}$  and  $X_{ijk}$  are the values of the  $k^{\text{th}}$  variables in the  $j^{\text{th}}$  location for monolingual English workers and workers of the  $i^{\text{th}}$  language group respectively. The experience and experience squared terms were combined, as were the terms of the five immigration status categories.

Table 3 presents the contributions to differences in the log wage for education, experience, and immigration status, as well as the residual difference (the language coefficient), by language group and location. A positive entry indicates that the difference in characteristic is in favour of the monolingual English, while a negative value implies that the difference favours the other language group. These values can be interpreted as the change in another language group's wage that would result if its value of the characteristic were equal to that of monolingual English workers.

Among the nonbilingual groups, the monolingual English had the highest level of education. If the French monolinguals and the other groups had English monolingual levels of schooling, their wages would have been 10 to 35 percent higher. For most of the nonEnglish speaking groups, the wage difference caused by the schooling difference with monolingual English workers was larger than the difference caused by the wage premium for speaking English. The contribution of education differences to wage differences

Table 3

## Sources of Wage Difference for Language Groups

	Other English	No Official Language	Monolingual French	Other French	Bilingual French	Bilingual English	Bilingual Other
<b>Quebec</b>							
Experience	-.045	-.063	.005	.032	.031	.013	.073
Education	.122	.292	.166	.246	.007	-.039	-.027
Prd. Immig.	.060	.068	-.005	+.088	-.006	-.016	.060
Size of Place	-.001	-.021	.029	+.021	-.002	-.009	-.020
Residual	.197	.281	.173	.165	.072	-.002	.123
<b>English Canada</b>							
Experience	-.020	-.051	-.009		-.014	.038	.043
Education	.109	.305	.223		.119	-.055	-.103
Prd. Immig.	.013	.058	.011		.005	.005	.011
Size of Place	-.020	-.040	-.002		.008	-.006	-.045
Region	-.024	-.038	.035		.028	-.017	-.025
Residual	.083	.100	.054		.015	-.004	.059
<b>Canada</b>							
Experience	-.025	-.064	.019	-.047	.010	.024	.053
Education	.110	.298	.152	.274	.012	-.055	-.059
Prd. Immig.	.020	.054	.005	.038	.004	.002	.023
Size of Place	-.018	-.039	.016	-.043	-.014	-.014	-.041
Region	-.020	-.028	.005	-.014	.006	-.010	-.005
Residual	.090	.134	.123	.156	.026	-.019	.106
<b>Toronto</b>							
Experience	.030		-.057			.048	
Education	.124		.273			-.061	
Prd. Immig.	.019		.047			.002	
Residual	.102		.102			-.010	
<b>Montreal</b>							
Experience	-.022	-.084	.000	-.055	.004	.004	.018
Education	.127	.353	.209	.304	.071	.002	.143
Prd. Immig.	.063	.099	-.015	.071	-.015	-.013	.048
Residual	.254	.363	.161	.142	.075	.030	.128

between the monolingual English and bilinguals was mixed, since the bilinguals often had higher levels of schooling than the monolingual English.

Experience and immigration status were relatively unimportant in explaining wage differences. For no language/location would a change in either variable to monolingual English levels have resulted in as much as a 10 percent change in wage rates, and for most categories the change would have been under five percent. In the regional and national samples, differences in location contributed little to explaining French-English and Other-English wage differences. Only schooling differences and the wage premia themselves were important in explaining wage differences among language groups in Canada.

#### VI. Wage Differences and Language Policies

The results presented above indicate that in 1971 in Montreal and Quebec, there were substantial economic rewards to learning French or English for male workers who spoke neither, and substantial rewards to speaking English for native French speakers. Even after learning English, however, and after accounting for other differences, native French speaking men earned lower wages than monolingual English men. There was no significant wage premium for native English speakers who learned French.

Outside Quebec, monolingual English men earned significantly higher wages than men whose native language was neither French nor English, other factors constant, but the difference was smaller than in Quebec and Montreal. Monolingual English workers also earned more than monolingual and bilingual French workers, but the differences were not statistically significant. Again,

these differences were smaller than in French Canada. Bilingual English men earned a small and insignificant amount more than the monolingual English.

Workers have responded to these economic incentives in the expected fashion. In Montreal, where the economic rewards to speaking English were large and rewards outside the workplace for speaking French exist, French bilinguals were almost twice as numerous as French monolinguals and half the English workforce was bilingual. In Quebec outside Montreal, where the rewards to speaking English were smaller, the percentage of French bilinguals was lower and the percentage of English bilinguals higher. In English Canada, only seven percent of the English men in the sample could speak French, but over 85 percent of the French men knew English.

Two different government policies have emerged to try to change these figures. Provincial governments in Quebec have tried to improve the relative position of the French by increasing spending on education and by making education more useful in the labour market. More recently, the Parti Quebecois has tried to decrease the wage premium for English speaking by increasing the demand for French workers. Included in implemented and proposed policies have been decreased provision of government services in English, and thus decreased governmental demand for bilinguals; increased demand for French speaking workers in governmental and semi-governmental agencies; and regulations discouraging the use of English in the private sector.

The economic model implicit in this paper, and in the Parti Quebecois policies, is a partial equilibrium model of the labour market. Changes in supply or demand curves in the market for one type of language skills is assumed to have little or no effect on the equilibrium of other language markets. Breton (1978) suggests that a general equilibrium model may be more accurate. Requiring that managers and technicians be fluent in French

may raise the wages of monolingual French managers, but if capital from English Canada and the U.S. leaves Montreal as a result, this rise will be at the expense of the wages of less skilled, primarily French, workers. The extent to which this is true depends on supply elasticities of capital and labour by different language groups, and is beyond the scope of this paper. A similar argument, that language differences in wage rates will only be eliminated at the expense of lowering all wage rates, has also been made by critics of Parti Quebecois policies.

On the other side, the federal government has proposed policies designed to increase the use of French in English Canada. These have included decreasing the cost of learning French by improving language training in schools; decreasing the cost to French native speakers of remaining monolingual by offering more government services in French, and increasing the demand for bilingual workers in the civil service. The analysis above suggests that without much stronger economic incentives in the labour market, it is unlikely that a significant portion of the population in English Canada will become bilingual. Furthermore, these policies have no effect on the incentives of native French speakers to become bilingual, or on wage differentials between the French minority and the English majority outside Quebec. Language policies at both Quebec and federal levels have only been important since 1970. In Quebec especially, the most dramatic changes in policy did not occur until 1976. It will be interesting to see the results of federal and provincial efforts when this analysis can be redone on the 1981 Census.

Footnotes

<sup>1</sup>The two sets of results are not strictly comparable, since Lieberman compared income by ethnic group and language ability, while Boulet compared earnings by mother tongue and language ability. Nevertheless, the difference in findings is unexpected. Since both authors had access to special tabulations of unpublished 1961 Census data by Statistics Canada, it is not possible to replicate their work.

<sup>2</sup>See Kuch and Haessel (1979), Table E-2, p. 163; Table E-3, p. 164; and Table 5-2, p. 79. They also found that (Table G-1, p. 186) bilingualism significantly increased the annual earnings of ethnic French women but had a negative though insignificant effect on earnings of ethnic British women, other things equal.

<sup>3</sup>The Census variable used to identify native language was the language usually spoken at home rather than the first language spoken that is still understood. For the overwhelming majority of Canadians whose first language was English or French, these two are the same. A sizeable minority of people who first spoke other languages usually spoke English at home in 1971. Since the purpose of this paper is to analyze wage premia for language skills rather than shifts in language use, it seemed preferable to classify workers by the language currently used rather than by the language first used. This current language is referred to as the native language because it usually is the individual's mother tongue, and because no other convenient expression exists. For a discussion of language shifts, see Beaujot (1979).

<sup>4</sup>Self-employment income includes both property income and labour income. Lazear (197 ) has shown that students choose lower wage jobs than



nonstudents, perhaps in return for more flexible working hours. Part time and part year workers were also eliminated for this reason and because of the very large errors in the wage calculated for them from available Census data. The hourly wage was calculated as annual earnings divided by weeks worked times usual hours worked. The labour supply variables were reported by very broad categories for the excluded workers but narrow categories for full time, full year workers.

<sup>5</sup> Because of insufficient numbers of observations, in Toronto bilingual French and bilingual others were included with bilingual English, and monolingual French and other French were included with the no official language group. In English Canada, other French were included with nonlingual French.

<sup>6</sup> Without further information, it is not possible to tell whether these differences in bilingualism are the result of differences between labour markets in wage premia for different language skills, differences in returns in consumption, or differences in the costs of learning second languages.

<sup>7</sup> It is not possible to say whether the remaining wage difference between bilingual French workers and English workers in Montreal occurred because the French were not completely fluent in English, because of ethnic discrimination, or because of other differences between the language groups not held constant in the regression.

<sup>8</sup> An F test indicated that the wage equation was significantly different for English Canada and Quebec. Other F tests could not be performed because Toronto and Montreal residents were not identified in the English Canada and Quebec samples.

<sup>9</sup>As mentioned above, it was not possible to identify Montreal residents in the Quebec sample.

<sup>10</sup>Kuch and Haessel (1979), using the same data, did not find a significant earnings effect, but Carliner (1979) and Chiswick (1978) did find significant differences between immigrants and natives in the U.S. F tests indicate that the immigration coefficients as a group were significant in all regressions.

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