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**The Economics of Language:
The Roles of Education and Labor Market
Outcomes**

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**The Economics of Language:
The Roles of Education and Labor Market Outcomes**

by
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Abstract

In most countries, whether developed or developing, there are significant linguistic minorities, that is, segments of the population that are not fluent in the dominant language. Relatively little is known about the determinants and consequences of dominant language fluency among linguistic minorities, although there is now a greater appreciation for this diversity than in the past.

This paper presents the development of a model of the determinants of dominant language proficiency. The model is based on three primary factors, exposure to the dominant language, efficiency in acquiring the dominant language skills, and economic incentives for acquiring dominant language proficiency. Tests of the model are summarized for immigrants in six countries.

Preliminary studies suggest that there can be substantial economic benefits for the individual and the society when linguistic minorities acquire dominant language proficiency. The benefits to the individual may come in the form of being more successful in consumption activities (including using health care and family planning resources). Several studies have shown benefits in the form of higher earnings and greater employment. For the United States, annual earnings are increased by about 19 percent for immigrants who are fluent compared to those who lack fluency. For the economy as a whole, increased economic growth and reductions in poverty and inequality may be important benefits.

The broadening of opportunities in consumption, educational and labor market activities due to enhanced proficiency in the language need not come at the expense of a diminution of proficiency in the mother tongue. The issue is not choosing one language or another, but the costs of and benefits from proficiency in the dominant language of a country.

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Introduction

In recent years it has become recognized that many, if not most, countries are linguistically heterogeneous. This heterogeneity may have come about from one or more of several factors. These include the joining together in one country of regions that differ in their dominant language (e.g., India, Belgium), the presence of indigenous peoples in regions of overseas settlement (e.g., Latin America, Australia) or continental territorial expansion (e.g., United States, Russia), and immigrants from countries with a different dominant language than the host society (e.g., South and East Asians in the Persian Gulf, Turkish immigrants in Germany). One of the least appreciated but nearly universal characteristics of the developing countries of Asia, Africa, and Latin America is their internal linguistic heterogeneity. Although we often think of Latin America as speaking primarily Spanish or Portuguese, in most of the countries there are significant indigenous populations who also speak an indigenous language, either exclusively, or in conjunction with the dominant language. In addition, in much of Africa and Asia the ethnic heterogeneity of the population results in varying degrees of linguistic diversity within developing countries.

An important policy question is whether the absence of fluency or proficiency in the dominant language has a detrimental effect on the consumption and labor market activities of linguistic minorities. Although direct data are not available, limited fluency narrows the range of consumption opportunities, including access to health care. A narrower range of consumption opportunities would result in paying higher prices and having a less desirable consumption package. Limited language skills must hurt in the consumption sphere.

Language skills, including fluency and literacy, may also play a central role in the human capital that individuals bring to training opportunities (e.g., schooling, on-the-job training), and to the labor market. This effects not only the employment and earnings opportunities of the individual, but also the aggregate human capital available to the

economy. As a result of the latter, it effects the rate of economic growth and change of the economy.

This paper is based on my research program on the "Economics of Language." This research program has been concerned with two broad themes:

- (1) The role of language in a multi-lingual country. In a dual language country, such as Bolivia, what determines individual levels of bilingualism? Does bilingualism affect the individual's success in the labor market? What is the relation between linguistic heterogeneity and economic growth and development? And how do government policies affect these outcomes?
- (2) The role of destination-language skills among migrants from areas with a different dominant language. What are the socioeconomic and demographic determinants of proficiency in the destination's dominant language? Does this proficiency affect labor market behavior? And how do government policies affect these outcomes?

This second set of issues has been the larger part of our "language" research, and shall be the focus of this paper. Although this approach has been developed in terms of developed economies, there is nothing inherent in the methodology that limits it to these countries. With appropriate modification for country-specific features the methodology is broadly applicable. For example, rather than international migration, one can think in terms of internal migration from an area in which the minority language predominates to where the dominant national language is more important, for example, from the rural areas to the capital city. Data are often available on where the minority language speaker was born, where he (she) now lives, and when he (she) moved there, as well as more conventional data items such as schooling, age, gender, marital status, earnings, employment, occupation, parental characteristics, etc. Data on the linguistic characteristics describing the place of residence, including access to other minority language speakers and minority language print and electronic media, can often be developed. These variables are also important for understanding the determinants and

consequences of dominant language fluency among linguistic minorities. The modeling of the determinants and consequences of dominant language fluency among linguistic minorities will serve as the basis for future research on these issues in developing countries.

This paper will eschew the technical details of our research that has involved intensive theoretical analyses and intensive and extensive statistical analyses of census and survey data from several countries, at different points in time, but with particularly detailed analyses for the United States.¹ Instead, it will focus on the broad sweep of the findings. Those interested in the magnitude of particular regression coefficients, student's t-ratios, issues of endogeneity, simultaneous equations bias, and tests of the robustness of alternative definitions and specifications, should read the original research papers, some of which are indicated in the selected bibliography, after reading the overview in this paper.

Language Skills as Capital

It is useful to think of language skills as a form of human capital. "Language capital" satisfies the three essential requirements of human capital:

- (1) It is embodied in the person. It cannot be separated from the person, as could say a truck or a plow.
- (2) It is costly to create. Time and often out-of-pocket costs are incurred by the individual and/or society in obtaining language skills. Even first language acquisition by children requires time inputs by adults for these first language spoken skills to be developed. This is the investment dimension of language capital.
- (3) It is productive. It is hypothesized that language skills enhance productivity in the labor market (e.g., earnings), in the quality of life (e.g., consumption activities) outside the labor market, and in the degree of participation in the civic life of the country. These benefits are received

¹ See the Selected Bibliography for particular references.

over a period of time after the investment is made. This is the returns dimension of language capital.

The terms “dominant” or “majority” language and “minority” language used in this paper should not be thought of simply in terms of numbers of speakers. As used here, the “dominant” or “majority” language is the primary language of instruction, economic exchange, government, and political discourse in the country, regardless of the proportion of the population speaking the language. The “minority” language plays a lesser role in the educational, economic, government, and political spheres, even if it is spoken by a majority of the population.

Our research on the Economics of Language asks, and answers, three basic and inter-related questions:

- (1) What are the socioeconomic and demographic determinants of acquiring proficiency in the dominant language by minority language speakers?
- (2) Does language proficiency really matter for an individual's economic well-being, including earnings, occupational status, and employment?
- (3) Are the determinants and consequences of proficiency inter-related?

Although these questions are couched in terms of “proficiency” and the theoretical analyses are based on proficiency, the empirical literature is primarily based on “fluency” (speaking) rather than “literacy” (reading/writing). For a variety of reasons, nearly all censuses and surveys that include questions on language skills ask about fluency rather than literacy. This is unfortunate as the few data sets that include information on both fluency and literacy suggest that literacy may be as important, if not more important, than fluency in understanding the labor market impact of language skills. Yet, the same explanatory variables apparently are the primary determinants of fluency and literacy.

Ideally, what we would like to study is the effect of language proficiency on the overall economic and social well-being of the individual. This would include their activities in the

labor market, such as employment and earnings, and their activities as consumers. Does proficiency in the dominant language make one a more effective or more efficient consumer in the broadest sense of the term? Does it expand opportunities for enjoying, or at least the option of taking part in, the full richness of the political and cultural life in the host society? Does it affect the "market basket" of goods and services that people buy? Does it affect the way they allocate their time to work and among activities other than work? Unfortunately, to date, I am not aware of data that permit an analysis of the relation between consumption activities and language skills. Data on labor market activities are, however, more abundant. We therefore rely on measures of labor market activities, in particular earnings, in our analyses of the consequences of language proficiency.

An Example of Linguistic Diversity

Using the United States as an example, the data in Table 1 report the use at home of languages other than, or in addition to, English, as revealed in the 1990 Census of Population. Among the native born (91 percent of the population), 93 percent report speaking only English at home, and just over 7 percent speak another language, either exclusively or in conjunction with English. Of those 7 percent, nearly 60 percent report Spanish as the language, followed by French (9 percent), German (7 percent) and myriad other European and Asian languages, with Native American or indigenous American languages spoken by 2 percent. Among those born in a foreign country or in a U.S. territory, the use of a language other than English is far more prevalent: 79 percent for the foreign born and 87 percent among those born in a United States territory (primarily Puerto Rico).

Table 1: Population Speaking a Language Other than English at Home by Place of Birth, Persons Age 5 and Over, 1990 U.S. Census (percent)

	Native Born ^(a)	Born in U.S. Territories ^(b)	Foreign Born	Total
Percent of U.S. Population	90.9	0.6	8.5	100.0
Percent Speaking:				
Only English at home	92.7	13.5	20.9	86.2
A Language other than English	7.3	86.5	79.1	13.8
Total	100.0	100.0	100.0	100.0

^(a) Born in one of the 50 States or the District of Columbia. Includes those born abroad of American parents.

^(b) Of these, 86.7 percent were born in Puerto Rico and the remaining 13.3 percent in other U.S. territories in the Caribbean and the Pacific.

Source: U.S. Bureau of the Census, 1990 Census of Population, Public Use Microdata Sample, one-percent sample.

Table 2 presents some simple data on the English language fluency of the adult (age 25 to 64 years) foreign-born population of the United States as reported in the 1990 Census of Population. The "fluent" are defined as those who spoke only English at home or who spoke another language in their home but reported they spoke English "very well", as distinct from "well", "not well", and "not at all". The table shows fluency rates by country of birth and period of immigration, or duration of residence in the United States.

The fluency data are not reported separately by gender in Table 2. For persons of the same country of origin and duration in the U.S., the difference in reported rates of fluency between men and women is generally very small. Fluency rates differ by country of origin. Among the four major source regions, each of which provided one-fifth to one-fourth of the foreign born, the European/Canadians have the highest fluency rate (75 percent), followed by the other Latin American and Asian immigrants (50 percent and 49 percent, respectively), with Mexican immigrants having the lowest fluency rates (25 percent). The very small group of immigrants born in Africa (2 percent) have a very high fluency rate (78 percent).

Table 2: English Language Fluency of the Foreign Born, Age 25 to 64, by Region of Birth and Period of Immigration, 1990^(a) (Percent)

Period of Immigration	Europe/ Canada ^(b)	Mexico	Other Latin America ^(c)	Asia	Africa	Total ^(d)
1985-90	59.6	15.4	33.9	34.1	65.8	35.9
1975-84	67.9	20.1	43.6	44.8	80.4	42.4
1965-74	70.6	29.2	58.5	65.7	84.1	56.6
1960-64	83.4	42.1	67.5	73.3	89.3	70.6
1950-59	85.8	46.2	70.4	74.7	84.7	77.4
Before 1950	<u>90.0</u>	<u>51.3</u>	<u>83.3</u>	<u>69.6</u>	<u>100.0</u>	<u>82.7</u>
Total	76.0	25.4	49.7	48.6	77.7	51.4
Distribution by Region of Birth (percent)	24.1	20.7	22.6	26.5	2.1	100.0

^(a) Proportion who speak only English at home or who speak English very well.

^(b) Includes Australia and New Zealand.

^(c) Includes the Caribbean islands.

^(d) Includes other areas not separately listed and countries not specified (4.0 percent of the foreign born).

Source: 1990 Census of Population, Public Use Microdata Sample, five percent sample.

Fluency rates also vary by duration in the United States. Those who have lived in the United States a longer period of time are more fluent than recent arrivals within each of the country of birth categories. This is not reflecting a deterioration in English language skills among more recent cohorts of immigrants. The pattern of English fluency by duration in the United States within regions of origin is very similar in the 1980 and 1990 Censuses of Population. Thus, fluency is reflecting a process of adjustment over time.

Determinants of Language Proficiency

The model we have used to study the determinants of fluency in the destination language depends on what we call the three "Es"—Exposure, Efficiency and Economic Incentives. The model has been applied to census and survey data for immigrants in a series of developed countries, in particular, Australia, Canada, the United States, Israel, the Netherlands and Germany. Table 3 indicates whether empirically selected explanatory variables have a positive (+), negative (-), or no statistically significant effect (0) on the destination language fluency of the foreign born.

Table 3: Determinants of Destination Language Competence Among the Foreign Born in Six Major Immigrant Receiving Countries

Variable	US		CAN	AUL	GER	ISR	NL
	ALL	MEX					
Duration in Destination	+	+	+	+	+	+	+
Minority Language Concentration	-	-	-	-	-*	-	-*
Age at Migration	-	-	-	-	-	-	-
Education	+	+	+	+	+	+	+
Refugees/Sojourners	-	?	-	-	?	-	?
Married Overseas	-	-	-	-	-	-	-
Children (Men) ^(a)	+	+	0	0	+	+	-

* Coefficient for the largest immigrant group (Turkish men).

^(a) Coefficient is less positive or more negative for women.

Notes: Symbol indications whether the variable has a positive (+), negative (-), or no significant effect (0) on destination language fluency. ? denotes appropriate variable is not available. MEX means immigrants born in Mexico, ALL means all countries of origin.

Source: Chiswick and Miller, 1995.

The Exposure variables can be pre-migration or post-migration exposure to the destination language. Pre-migration exposure would, for example, be the extent to which, say, English is used in the origin country as a dominant language (e.g., Ireland), a lingua franca (e.g., India), or a language commonly studied in schools (e.g., Scandinavia). Data on formal training in the language are generally not available, but immigrants from countries in which the destination language is used more extensively are found to be more fluent. Also, the smaller the "linguistic distance" between the origin and destination languages, that is, the closer the structure, grammar, vocabulary and other characteristics of the two languages, the more fluent are the immigrants.

The census and survey data available for study provide information on the post-migration characteristics and circumstances of the migrant. The most basic variable is exposure measured in units of time—duration in the destination. This turns out to be a very important factor as fluency increases sharply with duration at first and then increases, but at a slower rate (Table 2).

We are also interested in the intensity of exposure to the destination language per unit of time in the destination. It would be good to have information on formal language training (e.g. English-as-a-second-language training), but these data are generally not available. Instead, we use indirect measures of the ease of avoiding using the destination language. Since language skills improve with usage, whatever detracts from using the destination language retards fluency in this language. One issue we examine is the extent to which other people in the "local region" in which the migrant lives speak the same origin language, without regard for their country of birth. The "local region" is defined in terms of the labor market. If the region were defined too narrowly (e.g., small neighborhood), location would be an endogenous variable even within a local labor market. In a labor market area there may be substantial stratification in residential location as a function of income or earnings, and hence by language proficiency. We find that the greater the "minority language concentration in the region" the lower is the immigrant's dominant language fluency rate (Table 3). In more detailed analyses for Australia, we find that a greater number of newspapers and hours of radio/TV broadcasts in the origin language are associated with lower English language fluency.

The "linguistic interaction" in the home is also relevant. To the extent the origin language is used in the home, there is less practice in the destination language. We find that those who married their current spouse before migration, or those whose current spouse is of the same linguistic origin, are less fluent than other married individuals and those who are not married. Data for Australia indicate that the presence of relatives other than spouse and children also detracts from English language fluency.

Children living at home present a more complex story. Children may have two offsetting effects simultaneously, as "teachers" and as "translators." Children have a phenomenal ability to absorb new languages, and they spend many hours in school studying the new language. Directly and indirectly they bring it home to their parents, serving as teachers, perhaps unwittingly, of the destination language and culture. Yet children may also serve as translators or intermediaries between the minority language of

their parents and the dominant language outside the home. Children as translators may play a larger role in consumption activities than in the labor market. Children can shop for or with parents, for example, or accompany them in consumption activities in a way that they cannot generally do for employment activities.

We find a mixed picture for children. The effects of children on parental fluency varies across countries—it is sometimes positive, sometimes negative and sometimes non-existent (Table 3). Moreover, children seem to play a less positive or more negative role in language fluency for their mothers than for their fathers. This suggests that the translator role may be relatively more important for their mothers than for their fathers.

By Efficiency in language acquisition we mean the ability to convert exposure into language skills. Age at immigration is clearly an important efficiency variable. Younger children grasp new languages quickly and people apparently lose this ability with age. In all of the studies, those who migrated at a younger age are more fluent (Table 3).

Level of schooling is also expected to be an important efficiency factor. Those with more schooling have a greater knowledge of the structure of their native language and may therefore be more efficient in learning other languages. It may also be that those with more schooling are simply more able academically, and this is what enhances their language facility. Those with more schooling in the origin may have started "foreign language" instruction before emigrating. Exposure to English or French in schools in the home country before immigration may, in part, be responsible for fluency in these languages increasing with educational level. This is not likely to occur for Dutch, German, or Hebrew. In all of the linguistic destinations studied, however, schooling is found to have a strong positive effect on destination language skills (Table 3).

The efficiency with which one converts exposure into language skills may depend on how hard one works at it. Sojourners or temporary migrants are less likely to focus on learning the language of the destination than are permanent settlers. This makes good

economic sense as sojourners and temporary migrants have a shorter period to benefit from this proficiency. And, it is interesting that the two largest groups with high rates of returning to their origin, two groups that otherwise have nothing in common, Mexican immigrants in the United States and North American immigrants in Israel, are the least fluent group in their destinations.

Refugees are also found to have a low level of fluency in the destination, other things the same (Table 3). This is not surprising. Refugees are not moving because they expect an easier adjustment in the destination, as would economic migrants or family migrants, but because they feel compelled to flee due to political and other factors. Moreover, many refugees are unable to plan for the move, and may not know their final destination, reducing their ability to obtain elementary destination language skills before emigrating. Various refugee groups—Vietnamese, Cubans, Chinese, Soviet Jews—show lower levels of fluency in their countries of settlement (Table 3).

The third E is Economic Incentives. These incentives for acquiring language skills could be for consumption activities or they could be for labor market activities. Unfortunately, the censuses and surveys useful for this research lack appropriate data for analyzing the effects of consumption activities on language skills. Data are available for labor market activities, but complex statistical problems intervene. It has been shown, however, that those who anticipate greater labor market returns from becoming fluent in the language are the ones who are more likely to become fluent. These returns are in the form of higher rates of employment, lower rates of unemployment, and higher weekly earnings. In particular, those with higher levels of schooling and more valuable job-related skills gain more from destination language fluency and tend to become more fluent that much sooner.

These factors help put into perspective the very low level of English language fluency among Mexican immigrants in the United States that we saw in Table 2. On the positive side, the larger number of children enhances the English language fluency for

adult men born in Mexico. All other factors, however, seem to work against them, including: their low level of schooling (7.5 years on average), little exposure to English in their origin, many migrating with family (spouse and other relatives), a high propensity for actual, anticipated or planned return migration ("sojourners"), large Spanish-speaking communities in many U.S. cities with print and electronic media and other institutions using the Spanish language, and low economic returns to English language skills because of their low level of schooling and occupation-specific skills.

Consequences of Language Proficiency

We have better documentation on the role of language skills in the labor market than for consumption activities. For all of the countries studied, fluency is strongly related to earnings and, especially for women, to their labor supply and employment (Table 4). In the United States, for example, it has been found that earnings increase with English language fluency, and this is true among workers with all levels of formal schooling. Using a simple fluent/not fluent dichotomy, weekly earnings among male immigrants are higher by about 17 percent for those who are fluent. Moreover, those who are more fluent, other variables being the same, work nearly one more week in the year and have about a one percentage point lower rate of unemployment. The approximately 19 percent higher annual earnings (17 percent higher weekly earnings and nearly 2 percent higher weeks worked) can be converted into a rate of return on the investment in dominant language proficiency. If, on average, becoming "fluent" required the equivalent of six months full time language training, the rate of return would be approximately 36 percent, if it required the equivalent of a full year of training it would be about 18 percent, and for two years of training, about 9 percent.

Table 4: Effect of Destination Language Competence on Earnings Among the Foreign Born in Five Major Immigrant Receiving Countries

	<u>US</u>		<u>CAN</u>	<u>AUL</u>	<u>GER</u>	<u>ISR</u>
	<u>ALL</u>	<u>MEX</u>				
Percent Increase in Earnings from Becoming Fluent	16.9	15.0	12.2	8.3	6.3	10.1

Notes: The data are for the partial effects of a dichotomous fluent / not fluent variable on hourly or weekly earnings. All of the estimated effects are highly statistically significant. For the U.S., ALL means all countries of origin and MEX means born in Mexico.

Source: Chiswick and Miller, 1995.

Similar patterns are found in separate analyses for each of the major immigrant receiving countries, and for the major immigrant groups that have been studied within these countries. Immigrants without adequate language skills can and do seek shelter in immigrant enclaves or linguistic ghettos, but they pay a price in terms of lower earnings and higher unemployment. One can mitigate, but not avoid, the negative consequences of limited proficiency on labor market success in a "linguistic ghetto." Unfortunately, this has negative feedback effects as living and working in a linguistic enclave reduces opportunities for learning dominant language skills.

Where it has been possible to study the issue statistically, it has been found that literacy in the destination language has a more powerful effect than fluency. While fluency and literacy are inter-related, and both have their roles to play in the labor market, much useful insight may have been lost by the tendency to focus on fluency and to avoid questions on literacy in the dominant language in most censuses and surveys.

Proficiency in the host country language also opens up educational opportunities in the destination. These educational opportunities may be formal schooling, or on-the-job training. Post-migration training can be an important avenue through which migrants convert pre-migration skills with low transferability in the destination into more highly transferable skills. Or it can be the avenue for acquiring new skills more suitable for the

destination. In either case, labor market success may be thwarted if limited language skills inhibit post-migration training.

Public Policy

For most linguistic minorities in developed countries one of the best investments they can make may be the investment in proficiency, both fluency and literacy, in the dominant language. This proficiency expands horizons in consumption, in access to the dominant culture, and in generating the earnings and employment that facilitates wider choices and greater consumption. This broadening of opportunities need not result in a diminution of proficiency in the mother tongue. The issue is not, after all, choosing one language or another, but the determinants of and benefits from proficiency in the dominant language of the country.

Relatively little is known about the determinants and consequences of dominant language proficiency among linguistic minorities in less developed and transitional economies. It is known that many of these countries are multilingual and there is now a greater appreciation for this linguistic diversity than in the past. It is also believed from preliminary studies that there are substantial economic benefits for the individual and the country when linguistic minorities acquire dominant language skills. Additional, research in this area would be an invaluable guide to public policy. This research should explore bilingual education in the schools as a way of providing the dual language capabilities. It should also explore "adult education" training programs that provide the opportunity for those of working age to obtain dominant language skills. Moreover, more research is needed to estimate the labor market and non-labor market returns to dominant language fluency among linguistic minorities, the effect of expanded language skills on poverty reduction, as well as the potential contribution to economic growth and development of an expansion of dominant language capabilities.

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