English Language Ability of Foreign Born in the United States: Assimilation and Cohort Effects, 2003

Acquisition of the dominant language of the host country is one of the most central facets of assimilation and acculturation for the foreign born[1] and therefore has drawn a lot of theoretical and empirical interest both in the context of the United States (US henceforth) as well as other countries.

The two perspectives that have dominated the research relating to language acquisition are; a) the degree of its proficiency and the subsequent impact on economic outcomes such as employment, earnings and b) the extent of its usage across the different (immigrant) generations. While the first of these perspectives dominant in the Economics literature views language acquisition as an investment while the other one, dominant in the discipline of Sociology, views language acquisition as a reflection of assimilation. Theoretically, the first one is a more of human capital perspective while the second relies on the assimilation framework. Regardless of the specific theoretical emphasis, the noteworthy findings that the past research elicits are; a) acquisition of the dominant language is positively associated with socio-economic outcomes for the immigrants and b) age at entry and duration of stay are the most significant factors that influence language acquisition along with the others such as the education, gender, familiarity with the language, linguistic and social distance between the source and origin country. An examination and update of the second finding constitutes the focus of present research.

The economic and the sociological studies in this context have shown that after controlling for age at entry, the likelihood of being able to speak English increases with duration of stay in the US[2] (Grenier 1984; Veltman 1983, 1988; Chiswick 1991, 1998, 2004; Stevens 1992, 2003). In a relatively more recent study Stevens (1999) finds that age at entry is a crucial factor in acquisition of English language. While according to some experts, duration of stay in the host country is one of the most significant variables along with the age at entry though the incremental effect of stay in the US on English proficiency declines suggesting that the pace of language acquisition is much higher in the initial than in the latter years. Carliner (1995) using the 1980 and 1990 Census data finds a role of both cohort and assimilation effects. He shows that while there has been an annual decline of 0.3 percent since the 1950s in the immigrant population's language fluency (cohort effect), an additional year of stay raises the probability of fluency by 1.1 percentage point.

Thus, while the existing research is informative of the factors associated with language acquisition of immigrants, it is lacking in a couple of important respects; a) it does not examine how the interaction between the age and cohort – that is how the influence of age at entry is varying across cohorts and b) it is dated. The present study by examining the association between language acquisition with the interaction between age at entry and cohort using the latest available data set attempts to fill the

[1] We use foreign born and immigrants interchangeably.

[2] The association between age of entry and language acquisition has been a prominent area of interest in the literature that focuses on the biological and psychological aspects of language acquisition as well.

above mentioned gap in the literature.

The specific aims of this research include;

a) what is the role of assimilation (as measured by duration of stay) after controlling for the cohort effects in language acquisition?
b) what is the interaction between age and assimilation after controlling for the cohort?
c) how the above two vary across the major immigrant groups in the United States such as the Chinese, Japanese and the Hispanics?

Data and Select Preliminary Descriptive Results

We use multiple data sources, the US Census from the years, 1980, 1990, 2000 and the American Community Survey (ACS) for the period between 2000 and 2003. The measure of the English language ability is based on the response to the question asked to the respondents as to how well they could speak English; "very well", "well", "not well", or "not at all" and is therefore self reported[3].

Our preliminary descriptive statistics indicate that among immigrants who have been in the U.S. for a longer period of time, there is a larger fraction of people reporting that they speak English very well. For example, Census 2000 shows that 28 percent of immigrants who have been in the US for zero to five years speak English very well, while the corresponding figure for immigrants who have been in the US for six to ten years is 37 percent. (See Figure 1).

The positive relationship between language ability and the number of years in the US is evident the data set for the years that are being considered in this study indicating the positive role of the length of stay. Further, the proportion of immigrants with the most fluency, that is, those who can speak English very well rises with the increase in length of stay, though the rate of increase has been declining over time. For instance, in year 2000, immigrants who have been in the US for six to ten years have a nine percentage point higher proportion of fluent English speakers relative to those who have been in the US for zero to five years while immigrants who have been in the US for eleven to fifteen years only have a three percentage point higher proportion of fluent English speakers than those who have been in the US for six to ten years. Similar trend is observed with the data for the rest of the years. These findings suggest that over time diminishing returns set in with respect to language skill improvement. Thus even though language ability improves over time, its rate of improvement declines, a trend similar to what has been observed with regard to earnings.

This finding, however, does not enable us to distinguish between assimilation effect and the cohort effect. For example, if immigrants who came to the U.S. between 1990 and 1994 are better educated individuals with stronger language abilities than those who came to the U.S. between 1995 and 2000, the 2000 Census will still show that immigrants who have been in the US for six to ten years speak English better than those who have been in the US for zero to five years negating the positive role of assimilation. Similarly, over the period of time, there have been

[3] Although these are self-reporting language abilities, previous work has shown their reliability by comparing them to other objective language ability measures.

changes in the English language exposure and familiarity of the countries of immigrants' origins. Thus, it is very reasonable to expect that at the similar ages of entry (to the US), an immigrant entering in 1980 has a different language ability as compared to the one entering in 2000. The above possibilities make it imperative to conduct multi-variate analyses a) controlling for the cohort effect and b) interacting age and assimilation after controlling for cohort.

Empirical Specification and Select Preliminary Multivariate Results

We pool the data from all the years considered in the present study. We present some preliminary findings from the regression that estimate the association between the number of years in the US on the language ability, controlling for cohort effect:

$$LOGIT(speakwell) = X\beta + \gamma Dur + \delta Cohort + \varepsilon ,$$

The dependent variable thus is a binary one;
1 = if an immigrant reports speaking English very well
0 = otherwise
'X' is a set of control variables including age at immigration, gender, race, and education. Variable '*Dur*' is the number of years an immigrant has been in the US. Variable 'Cohort' indicates when the immigrant arrived in the US. The repeated cross-sectional nature of the data allows us to include the duration of residence (variable '*Dur*') and the cohort of arrival (variable '*Cohort*') in the regression simultaneously.

It may be noted that all workers who came to the US in 1985 have the same value for the variable '*Cohort*' value, but the value of the variable '*Dur'* is equal to five for the 1990 Census and accordingly equal to fifteen if they are observed in Census 2000.

The preliminary results as evident from Table 1 show that five more years in the US is associated with a 6 – 9 percent higher probability of speaking English very well and this positive effect is lower for larger duration values. These results confirm with the descriptive findings that though language skills improve with years in the US, the rate of improvement declines over time. Coefficients associated with the variable '*Cohort'* indicate that cohorts who come to the US earlier have better language abilities than more recent cohorts. Thus, ignoring the cohort effect would overestimate the assimilation effect. Coefficients on the vector '*X* 'show that women, black immigrants, and more educated immigrants have stronger language skills.

Excluding education from the regression results in enhancing the values of the coefficients associated with the variable, '*Dur*' implying that the positive role of education on language ability can partly be explained the duration effect. This will be particularly true for the immigrants who come to the US to acquired education. To distinguish assimilation from education effect, we run the regression using a sample of immigrants who migrate after age 24[4] since it is reasonable to expect majority of those who enter after age 24 to have completed their education before they migrate to the US. Results from this regression show that duration effect ranges from 4 percent to 7 percent, lower than what we obtained in the earlier estimates. (See Figure 2). It may be noted that for those immigrants who receive some education after they come

[4] Owing to the absence of the information on place of education in the Census data, we employ this indirect route.

to the US, this regression can not distinguish the effect of education on language skills and the assimilation effect on language skills.

Thus, the above descriptive and multi-variate results, albeit preliminary, indicate that that cohort of entry, age of entry and duration of stay play a role in determining the (English) language ability of a foreign born in the US. We propose to explore and update these interactions. Additionally, since it is well documented that language adaptation and acquisition depends on the characteristics of the countries of origin, we will examine inter –group comparisons by the major groups such as blacks, Chinese, Japanese and Hispanics.

References

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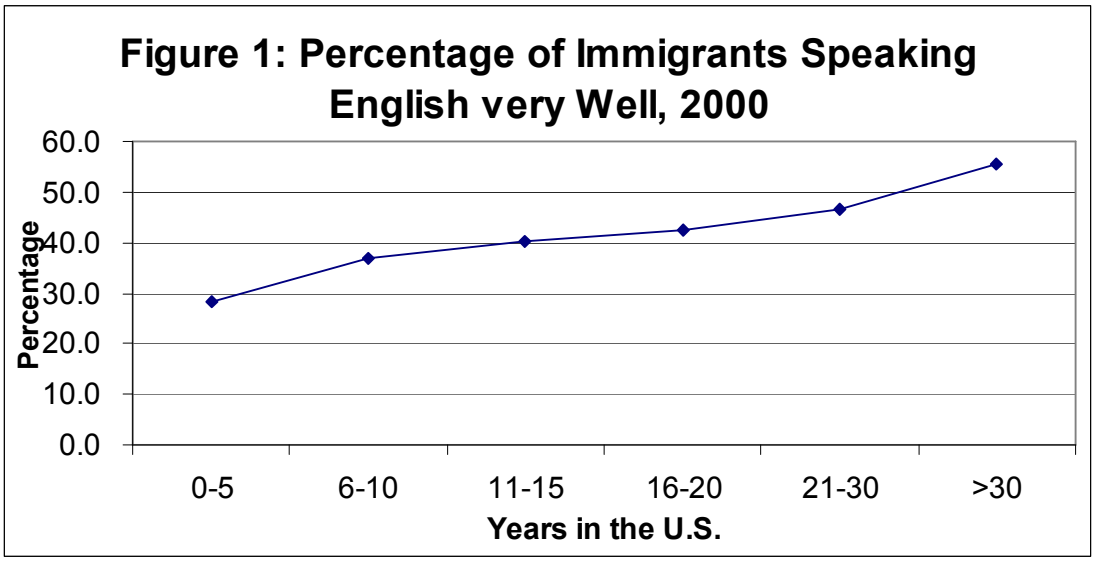
Figure 1: Percentage of Immigrants Speaking English very Well, 2000
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Percentage
0-5
6-10
11-15
16-20
21-30
>30
Years in the U.S.

Table 1: Logit Estimates and Standard Errors of Ability to Speak English very Well, 2000

	Full Sample		Immigrants Migrating At Ages 24 or Older	
	Coefficient	Standard Error	Coefficient	Standard Error
Duration of Stay	0.0912	0.002	0.0789	0.0033
Cohort2	0.1037	0.0088	0.0002	0.015
Cohort3	-0.005	0.009	0.0217	0.015
Cohort4	0.073	0.0104	0.1034	0.0175
Cohort5	0.0248	0.0108	0.0165	0.0184
Cohort6	0.0154	0.0106	0.0101	0.0182
Cohort7	-0.0463	0.0091	0.0037	0.0152
Cohort8	0.0581	0.0103	0.0626	0.0172
Cohort9	0.0701	0.0117	0.0619	0.0191
Cohort10	0.131	0.0131	0.1063	0.021
Cohort11	0.0937	0.013	0.1425	0.0206
Cohort12	0.2732	0.0124	0.5407	0.0189
Age at immigration	-0.0356	0.0002	-0.016	0.0003
Female	0.0219	0.004	0.0142	0.0066
Educational attainment	0.1603	0.0008	0.1682	0.0014
Race/Ethnicity				
Black	0.0851	0.0122	0.1729	0.0193
Chinese	-0.5284	0.009	-0.5487	0.0135
Japanese	-0.5182	0.0168	-0.4997	0.0225
hispanic	-0.5045	0.0046	-0.4614	0.0076
other race	-0.1576	0.0048	-0.1227	0.0082
Intercept	-0.4614	0.0108	-1.1652	0.024

Note: Durstion of stay is intervalled at 5 years. Cohorts are indicated by a set of dummy variable
Cohort 1 = 1 if immigrant arrives in the US between 1995 and 2000
Cohort 2 = 2 if immigrant arrives in the US between 1990 and 1994
Education - Education categories used by the Census 2000.

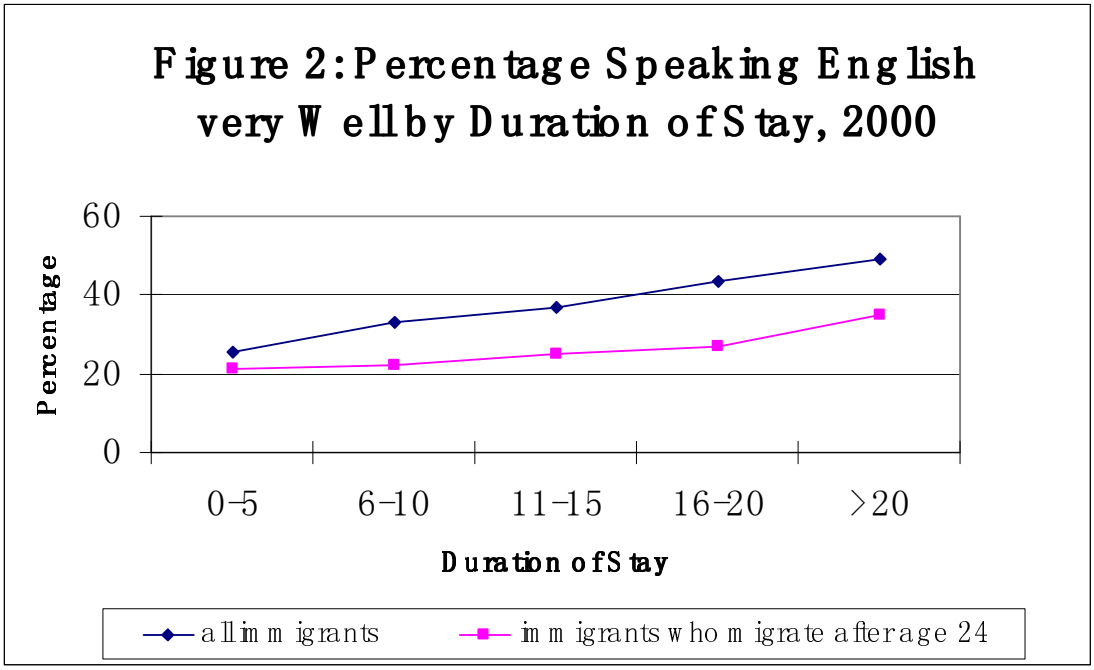
Figure 2: Percentage Speaking English very Well by Duration of Stay, 2000
60
40
20
0
Percentage
0-5
6-10
11-15
16-20
>20
Duration of Stay
all immigrants
immigrants who migrate after age 24