Language Diversity and Bilingualism Among Adolescents in the Pacific Northwest: Using GIS Method to Test the Neighborhood Effects

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Introduction

Language characteristics of immigrants and their children play important roles in assimilation in the American society. English language acquisition and minority language shift are expected to be potential resources for occupational and related attainments (Bean and Stevens, 2003[1]). However, the trend in the study of languages of immigrants has moved towards conceptualizing bilingualism, moving away from the notion of ability to speak either English well or not speak English well. Portes and Rumbaut (2001[2]) have done works using this perspective.

In this paper, I try to find out what degree of bilingualism exists among adolescents in the Pacific Northwest. Adolescents are interesting group of people for many reasons. Adolescents are growing and changing enormously. Peer pressure, self-esteem and locus of control are some of emotional and psychological maturity that adolescents go through. I am interested to understand how language skills affect immigrant adolescents and also what factors affect their proficiency in language skills. One of the factors I am interested in this paper is what kind of neighborhoods the immigrant adolescents live and how these affect their bilingualism.

Data and Methods

Sample

I use University of Washington Beyond High School Survey (UWBHS) data collected from high school seniors in the spring of 2000, 2002 and 2003. The total number of students in these three years with surveys is about 5,000. In 2000 and 2002, five public schools participated in the survey. In 2003, five more public schools and three private schools were added to the survey. The 2003 data are being coded at present. The data entry is expected to be complete by November of this year.

A quarter of the students in both years, 2000 and 2002 report speaking some language other than English at home. I expect to see a similar proportion of minority language speakers in 2003 also.

Dependent variable

My dependent variable is fluency in bilingualism. I use Portes and Rubaut's (2001) concept and construction of scales of bilingualism. The UWBHS survey asks the following questions about language skills:

[1] Bean, F. D. and G. Stevens. 2003. *America's Newcomers and the Dynamics of Diversity*. New York: Russell Sage Foundation.
[2] Portes, A. and R. G. Rumbaut. 2001. *Legacies*. New York: Russell Sage Foundation.

If a language other than English is spoken at home, how well do you...
    a) Understand the language? *(Very well, Well, Not Well, Not at all)*
    b) Speak the language?   *(Very well, Well, Not Well, Not at all)*
    c) Read the language?   *(Very well, Well, Not Well, Not at all)*
    d) Write the language?   *(Very well, Well, Not Well, Not at all)*

How well do you...
    a) Understand spoken English? *(Very well, Well, Not Well, Not at all)*
    b) Speak English?   *(Very well, Well, Not Well, Not at all)*
    c) Read English?   *(Very well, Well, Not Well, Not at all)*
    d) Write English?   *(Very well, Well, Not Well, Not at all)*

I construct a scale for proficiency in English using the bottom four questions. Similarly, I construct a scale for proficiency in minority language. The scales range from 0 (poor) to 1 (excellent). Then I use these two scales to construct a new scale for proficiency in bilingualism. Students who score high in both English and minority language scales are grouped into "fluent bilingual". Students who score low in both languages are "limited bilingual'. Students who score high in English but low in minority language are "English-dominant". Student who score low in English but high in minority language are "Minority language dominant".

The dependent variable is therefore has four categories, as shown below (Portes and Rumbaut, 2001). These categories are categorical rather than ordinal in the context of my hypotheses.

Fluent bilingual	English language dominant
Minority language dominant	Limited bilingual

Since the nature of the dependent variable is categorical, I am using Multinomial logistic regression for analysis.

GIS geo-coding of neighborhoods
The UWBHS survey collects addresses of students that the school administrations provide to the project. These addresses are students' places of residence at the time of the survey, or in the spring of their senior school year. I have used GIS method to code addresses of students from the first two years into neighborhoods. When the 2003 survey data are all entered, I will geo-code the addresses of the students from 2003.

The purpose of the GIS coding is two fold. First is to visually see where students live in terms of identifying ethnic enclaves. Second is to use the Census information on neighborhood characteristics including demographics in the analysis.

Preliminary Results

Preliminary analysis of data from the first two years shows impressive language diversity among the adolescents in the Pacific Northwest. Spanish is the most widely spoken language at home. Vietnamese, Khmer, Russian, Chinese, Japanese, Korean, various languages from the Caribbean and Pacific Island are other languages the high school seniors speak at home.

The students who report to speak a language other than English at home (referred from here onwards as 'minority language') are diverse also in terms of immigrant status. A third of the minority language speakers are native born (born in the US) with at least one of the parent foreign born. A third of them are immigrants themselves, with both parents foreign born. A third of them are native born, with both parents born in the US.

Bivariate analysis of fluency in bilingualism and some independent variables such as immigrant generation, length of stay in the US, GPA, participation in paid work or extra curricular activities, parent's education level reveal expected patterns. For example, native-born adolescents are more likely to be English dominant while first generation adolescents who have lived in the US for less than five years are more likely to be minority language dominant. There are fluent bilinguals and limited bilinguals too, which are the most interesting groups to me, who I would like to understand better.

I have not yet incorporated the neighborhood variables in the analysis. I will have these by the time the complete paper is due. I will also show results of the Multinomial regression when I have all the cases in the database, when 2003 coding is completed next month.

I expect to find that adolescents who live in the "ethnic enclaves" are more likely to be limited bilinguals or minority language dominant than those who live in other neighborhoods. Social class plays a crucial role in determining who lives in ethnic enclaves and who do not.