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**Education and Asymmetric Hispanic
Assimilation: A Preliminary Exploration**

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Abstract

In a recent book, Samuel Huntington argues that Hispanic immigration threatens "America's identity, values and way of life." He supports this argument by citing data that supports the widely held belief that Hispanics have not assimilated as well as other ethnic groups, and in fact some investigators have reported that the educational achievement of Hispanics actually declines in the third and fourth generations. This paper uses the data from the National Longitudinal Survey of Youth 1997 (NLSY97) to explore the implications of the assumption that Hispanics who are high school graduates are more likely to intermarry with the rest of the non-Hispanic population than Hispanics who are not high school graduates. The calculations in this paper suggest that the perception that Hispanics are not assimilating as well as other immigrant groups can be explained by selective assimilation that removes a large fraction of the more educated members of the group from the population that is being observed. Thus, the observations about third and subsequent generations of Hispanic immigrants should be questioned. The NLSY97 data and calculations based on that data suggest that the reason for the perceived lag in Hispanic assimilation is the high rate of intermarriage among that portion of that population with high human capital.

Note

Professor James Brown and I are in the process of recalibrating the model using census data.

Resumen

En un libro reciente, Samuel Huntington argumenta que la inmigración hispana amenaza "la identidad, los valores y el modo de vida de América". Él apoya sus argumentos citando datos que sustentan la creencia ampliamente aceptada de que los "Hispanos" no se han asimilado tan bien como otros grupos étnicos. De hecho, algunos investigadores han reportado que los logros educacionales de los Hispanos han declinado en la tercera o cuarta generación. Este artículo usa datos de la Encuesta Longitudinal Nacional de la Juventud de 1997 (NLSY97) para explorar las implicaciones del supuesto de que los Hispanos que son graduados de "High School" son más susceptibles de casarse con el resto de la población no-Hispana que los Hispanos que no se gradúan del High School. Los cálculos en este artículo sugieren que la percepción de que los Hispanos no se asimilan tan bien como otros grupos puede ser explicada por asimilación selectiva que

remueve a la gran fracción de los miembros mas educados del grupo de la población que es observada. Por tanto, las observaciones de la tercera y las subsecuentes generaciones de inmigrantes hispanos deben ser cuestionadas. Los datos de la NLSY97, y los cálculos basados en tales datos, sugieren que la razón para el rezago percibido en la asimilación hispana es la alta tasa de matrimonios entra la porción de población con alto capital humano.

Education
and
Asymmetric Hispanic Assimilation:
A Preliminary Exploration

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Introduction

There are reports that Hispanic in the United States make progress in increasing their educational attainment in the first and second generations and then stagnate. In fact some investigators have reported that the educational achievement of Hispanics actually declines in the third and fourth generations. In his recent book, Samuel Huntington views Hispanic immigration with alarm and cites such findings as support for his position that Hispanic immigration is a threat to American identity.

Such observations view the Hispanic and Mexican community as a homogeneous group. Such stereotyping can be seriously misleading. The data on Hispanics is very incomplete. It is an ethnic group that is not well understood or even well defined. A German born in Mexico is a Hispanic, but a native of Andalusia is not considered a Hispanic in the United States.

There is a widely held belief that Hispanics have not assimilated as well as other ethnic groups. However, the reported intermarriage rates range from eight percent for the first generation, thirty-two percent for the second generation and fifty-seven percent for the third generation.² At this rate a substantial majority of a cohort would have intermarried with the non-Hispanic population in two or three generations.

The problem of Hispanic immigration is further complicated because it is imbedded in two related, but separate phenomena. The first is the movement of people to the United States from Latin America seeking better jobs and the second is the economic and cultural integration of the United States and Mexico. The latter phenomenon is what alarms Professor Huntington and others. Like Hispanics, the people opposed to the immigration of Hispanics are not a homogeneous lot. They range from people like Professor Huntington who are trying to understand a phenomenon with imperfect data, and perhaps a flawed paradigm, to ignorant bigots who believe that beer, hamburger and pizza are American inventions. Their counterparts on the other side range from romantic idealists who champion the idea of *La Raza*, ignoring almost four hundred years of race and class conflict in Mexico, and political opportunists, trying to create an ethnic power base.

Both groups have a vested interest in creating the perception that Hispanics are not assimilating. Those would want to restrict Hispanic immigration have an interest in creating the public perception that Hispanic immigrants are not assimilating and are a threat to our national identity. Hispanic activists, romantic or pragmatic, would like to create the perception in the Hispanic community that they are not succeeding, that American

² See Suro and Passel (2003).

society is destroying their cultural heritage, and that they must band together for mutual support.

Another problem in understanding the process of the assimilation of Mexicans into the United States is that the population of Mexico is ethnically heterogeneous. The composition of the current Mexican population is: 60 percent Mestizo (Amerindian-Spanish); 30 percent Amerindian or predominantly Amerindian, nine percent white and one percent other.³

It must be understood that the definition of "white" is different in Mexico and other parts of Hispanic America from the United States. In colonial times the Mestizo population was legally defined into three subgroups: Castizo (offspring of one Spanish parent and one Mestizo parent), Mestizo (offspring of one Indian parent and one Spanish parent) and Coyte (offspring of one Mestizo parent and one Indian parent). The offspring of a Castizo and a Spanish parent became white. If the ethnic composition of Mexican immigrant reflects the Mexican population, then if thirty percent of the population is intermarrying with non-Hispanics, a substantial number of Mestizos must be marrying non-Hispanics and having "white" offspring.

Among Hispanics in the NLSY97 data, 49.4 percent of the men overall and 63.7 percent of the men in a mixed marriage self-identified as white. Among women, 47.2 percent of the population self-identified as white and 70.5 percent of the women in a mixed marriage self-identified as white. Since most immigrants are not from the small white elite in Mexico, many Mestizos who immigrate to the United States are identifying as white rather than members of *La Raza*.

Educated white Hispanics do not find it difficult to assimilate into the general population. Hispanic assimilation is inherently different from African-American assimilation, as individuals with one-eighth African-American heritage have typically been considered as African-American in the United States. However, the offspring of a Mestizo with a non-Hispanic will likely be considered to be white.

My conjecture is that the problem Huntington describes may be only an artifact of the way we count. I believe that the Hispanics who are intermarrying are in the upper end of the distribution in education and other forms of human capital. Inasmuch as the children and grandchildren of these mixed marriages are less likely to identify as Hispanic, measures of the transmission of education and other forms of human capital may be misleading because a portion of the upper tail may be missing from the sample.⁴

³ CIA. The World Fact Book (2002)

⁴ See Duncan and Trejo (2004)

This behavioral assumption behind this conjecture is based of Becker's work on the family and in the work done by Diamond and others in search models.⁵ Marriage formation can be a search process in which the probability of a pairing depends on the characteristics of the population in which the search is conducted. Such models are well known and there is no need to go into the formal description of the process. The implication of such a process is that Hispanics with less education and other forms of human capital are less likely to intermarry with non-Hispanics. People usually marry someone they meet in school, at work or socially. Hispanics without a high school education are less likely to be in venues where they have the opportunity to meet and thus marry non-Hispanics. Further, since most white non-Hispanics do have high school educations, Hispanics without a high school education are less attractive partners for marriage. This is particularly true in a society where failure to finish high school can be viewed as a signal of other shortcomings. This paper is an attempt to model of the dynamics of assimilation using the National Longitudinal Survey of Youth 1997 (NLSY97) to calibrate the parameters of the model.

2. The National Longitudinal Survey of Youth 1997 Data

The data set used to calibrate the parameters for the simulation is the National Longitudinal Survey of Youth 1997 (NLSY97). This is a longitudinal survey of youth born between 1980 and 1984. This survey is representative of that age group of the national population, but it over samples blacks and Hispanics. The purpose of this survey is to follow the labor market and educational experience of this cohort. It has data on the youth's family background. It is the data on the parents that I use to calibrate the model. The original sample had 8,985 youths. This includes 1891 Hispanic youths and 2188 Hispanic parents.

There are several problems with using this sample. First, although youths are selected to be a representative sample of the U. S. population, the parents are not. They are members of a group that were in their early forties in 1997. Second, to match the youths with the natural parents and have the necessary income and education data, it was necessary to restrict the sample to two-parent households. This may be truncating the lower end of the distribution. The last available survey at the time I started this study was done in 2001. At that time, approximately only half of sample was 19 or older and some of these youths had not graduated from high school nor had they

⁵ Becker (1981) and Diamond

dropped out. The 2003 survey was released in August 2004 and this problem can now be addressed.

Another problem with the NLSY97 data set, if the concern is the assimilation of Mexicans rather than Hispanics in general, is that Hispanics of Mexican origin who are born in the United States do not self-identify as Mexicans. In our sample only 26 out of 289 Hispanic males and 17 out of 542 females born in the United States self-identified as Mexicans.

The group that self-identifies as Mexican is very different from the rest of the Hispanic population. The average income of Hispanics of Mexican origin born in the United States that self-identify as Mexicans is about half of the average income of all Hispanics born in the United States.

The Hispanic men that self-identify as Mexicans are more heterogeneous in their education. A higher fraction has completed 16 or more years of schooling (15.4% vs. 13.1%) and a higher fraction of have not completed 12 or more year schooling (44.2% vs. 28.7) than Hispanics of born in the United States.

On the other hand, Hispanic women of Mexican origin born in the United States who self-identify, as Mexicans are better educated than Hispanics women born in the United States. Few of them have less than 12 years of education (13.6% vs. 36%) and more of them have more than 16 years of education (11.8% vs. 7.4). The sample is too small to be more than suggestive, but it does suggest an interesting research puzzle as to why their average incomes are lower.

The fact that Hispanics of Mexican origin born in the United States do not self-identify as Mexicans is not an insurmountable problem as the NLS GeoCode data set gives geographic information about the cohort. This data set and census data will make it possible to identify a substantial number of the Hispanics of Mexican origin. Access to this data requires special permission and I was not able to obtain it in time for this paper. Further, the data set with the 2003 survey is scheduled to be released in October of 2004.

The fact that most Hispanics of Mexican origin do not self-identify as Mexicans runs counter to the argument that Mexican Americans do not lose their primary loyalty to Mexico. The fact that those who do self-identify as Mexicans are so different from the population suggest that this is not just due of an error in coding.

The first question we address is the distribution of Hispanics in mixed marriages by education. Table 1 below gives the fraction of each group that is in a mixed marriage. Thus, of Hispanics born in the United States who have completed 12 or more years of education, 62.6 percent of the males and 37.5 percent of the females are in a mixed marriage. Among Hispanics born in the United States in the sample there are 244 mixed marriages out of a total of

830 so the intermarriage rate for the entire sample is 29.4 percent. This is consistent with most other studies.⁶

T A B L E 1

| Percentage of Hispanics in Mixed Marriages | | | | | |
|--|-------------|---------------------------------|-------------------------------|----------------|--|
| | | Less than 12 years of education | 12 years or more of education | Cohort Average | |
| Male | US born | 19.3 | 62.6 | 50.2 | |
| | Not US born | 3.3 | 14.8 | 7.4 | |
| Female | US born | 8.8 | 37.5 | 24.0 | |
| | Not US born | .4 | 12.8 | 13.5 | |

Table 2 below gives the income of Hispanics in a mixed marriage and Table 3 gives the income of Hispanics overall. Thus, for Hispanics born in the United States who have completed 12 or more years of education and are in a mixed marriage, the average income for males is \$ 40, 563 and \$28,465 for females. For Hispanics born in the United States who have completed 12 or more years of education, the average income of the males is \$ 35,521, and \$ 25,967 for females. Hispanics in mixed marriages have higher incomes than other Hispanics with similar education. Hispanics in mixed marriages have more education than other Hispanics. U. S. born males in the sample have an average of 13.42 years of education (sample size 147) compared to 12.21 years of education (sample size 305) for those not in a mixed marriage. U. S. born females in the sample have an average of 13.0 years of education (sample size 160) compared to 11.73 years of education (sample size 560) for those not in a mixed marriage. Duncan and Trejo (2004) get similar results using the 1990 census data. In their study U. S. born males in mixed marriage have an average of 12.8 years of education compared to 11.3 years of education for those with U.S. born Mexican wives. U. S. born females in mixed marriage have an average of 12.7 years of education compared to 11.1 years of education for those with U.S. born Mexican husbands.

T A B L E 2

| Income of Hispanics in Mixed Marriages | | | | | |
|--|-------------|---------------------------------|--------|-------------------------------|--------|
| | | Less than 12 years of education | | 12 years or more of education | |
| | | Number | Income | Number | Income |
| Male | US born | 12 | 35,994 | 55 | 40,563 |
| | Not US born | 6 | 23,000 | 9 | 30,000 |
| Female | US born | 9 | 22,000 | 56 | 28,465 |
| | Not US born | 2 | 52,000 | 24 | 25,291 |

⁶ Suro and Passel (2003).

T A B L E 3

| Income of Hispanics | | | | | |
|---------------------|-------------|---------------------------------|--------|-------------------------------|--------|
| | | Less than 12 years of education | | 12 years or more of education | |
| | | Number | Income | Number | Income |
| Male | US born | 83 | 19,609 | 206 | 35,521 |
| | Not US born | 273 | 15,156 | 149 | 25,782 |
| Female | US born | 194 | 12,794 | 347 | 25,967 |
| | Not US born | 466 | 14,048 | 242 | 20,149 |

Tables 4 and 5 below give the joint distribution of mixed marriages. Most marriages are between partners who have 12 or more years of education. Only a very small fraction is between partners who have less than 12 years of education of education.

T A B L E 4

| Distribution of Mixed Marriages for Hispanic Males (92 in Sample) | | | |
|--|--------------------|------------------|--------------------|
| Woman | Man | | |
| | | 12 years or more | Less than 12 years |
| | 12 years or more | 79.3% | 13.0% |
| | Less than 12 years | 2.2% | 5.4% |

T A B L E 5

| Distribution of Mixed Marriages for Hispanic Females (92 in Sample) | | | |
|--|--------------------|------------------|--------------------|
| Woman | Man | | |
| | | 12 years or more | Less than 12 years |
| | 12 years or more | 84.8% | 5.4% |
| | Less than 12 years | 7.6% | 2.2% |

The average U.S. born Hispanic male in a mixed marriages with less than 12 years of education makes \$35, 992 and the average U.S. born Hispanic female in a mixed marriages with less than 12 years of education makes \$23,000. (See Table 2 above.) This compares with \$19,609 and \$12,794 respectively for U.S. born Hispanics with less than 12 years of education not in a mixed marriage. The number of mixed marriages where only one partner has more than 12 years of education is too small to be statistically significant, but the observation is consistent with the conjecture that, on average, Hispanics in mixed marriages have higher human capital than those who are not.

The NLSY97 sample I am using is not a good source for the graduation rates of tHispanics. In 2001, the date of the last available survey, only about half of the sample was 19 or older and some of these youths had not graduated from high school nor dropped out. Table 6 below gives the graduation for all students 19 years or older. It should be noted that the sample represents children in two parent households. Since children in two-parent households are likely to do better in school, this creates an upward bias. This upper bias is so large that the least successful group in the sample, whites students whose parent have less than 12 years of education, have the same graduation rate as the national average in a recent Urban Institute study, which was 69 percent.⁷ The number of children from mixed marriages where one or more parent have less than 12 years of education in the sample 19 years or older in 2001 was too small to calculate graduation rates.

T A B L E 6

| | Number | Graduation rate |
|---|--------|-----------------|
| Non-Hispanic Father Hispanic Mother Both High School Graduates | 44 | .954 |
| Hispanic Father Non-Hispanic Mother Both High School Graduate | 42 | .857 |
| Hispanic Father and Mother Both High School Graduate | 427 | .846 |
| Hispanic Father and Mother Father High School Graduate | 32 | .906 |
| Hispanic Father and Mother Mother High School Graduate | 36 | .778 |
| Hispanic Father and Mother Neither High School Graduate | 166 | .723 |
| White Father and Mother Both High School Graduate | 1168 | .939 |
| White Father and Mother Father High School Graduate | 76 | .855 |
| White Father and Mother Mother High School Graduates | 110 | .762 |
| White Father and Mother Neither High School Graduate | 126 | .677 |

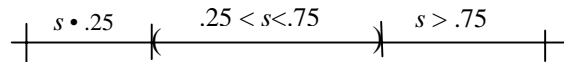
3. Model

Conceptually, the model is a thought experiment: In period 1, pick a sample of the population of first generation Hispanics large enough to be statistically

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useful and yet small enough so that there is no interaction within the population. Thus, it is assumed that members in the sample have not married within the sample. In period 2, pick a sample that is statistically identical to the children of the sample chosen in period 1. Continue this process for N generations.

Let s be a measure of the fraction of ancestors of the individual who are not Hispanic.



In the first period, $s \leq .25$ means at most one Hispanic grandparent. Similarly, in the second period, $s \geq .75$ means three non-Hispanic grandparents. In the second period; $.25 < s < .75$ means one non-Hispanic parent. In subsequent periods other combinations are possible. Then the subscript j enumerates one of the following six states:

- 1- high school graduate with $s \geq .75$.
- 2 - high school graduate with $.75 > s > .25$.
- 3 - high school graduate with $s \leq .25$.
- 4 - non-high school graduate with $s \geq .75$.
- 5 - non-high school graduate with $.75 > s > .25$.
- 6 - non-high school graduate with $s \leq .25$.

The vector can describe the state of the system:

$$z^i = \begin{pmatrix} x_1^i \\ \vdots \\ x_6^i \\ y_1^i \\ \vdots \\ y_6^i \end{pmatrix}$$

where x_j^i are males and y_j^i are females.

The variable, z_j^i , is a vector of a group of Hispanics that will marry outside of the group. The superscript i is the number of generations the cohort has been in the United States.

We will define the parameters:

p_{ij} probability of child finishing high school if father in state i and mother in state j .

q_{ij} probability of child not finishing high school if father in state i and mother in state j .

α_{ij} probability of a marriage between a male in state i and female in state j .

These parameters are used to construct the following transition matrix. The elements of the matrix are constructed using the simple rules of probability.

For example $\beta_{11} = \frac{1}{2}(\alpha_{11}p_{11} + \alpha_{12}p_{12} + \alpha_{14}p_{14} + \alpha_{15}p_{15})$ is the probability the male child of a Hispanic high school graduate married to a Hispanic or who is the product of a mixed marriage ($\frac{1}{2}(\alpha_{12}p_{12} + \alpha_{14}p_{14})$) will be a high school graduate.

The term $(\frac{1}{2}(\alpha_{11}p_{11} + \alpha_{14}p_{14}))$ is the probability a male Hispanic will marry a female Hispanic and that their male child graduates from high school. The term $(\frac{1}{2}(\alpha_{12}p_{12} + \alpha_{14}p_{14}))$ is the probability a male Hispanic will marry a female from a mixed marriage and that their male child graduates from high school. We will assume there is equal probability of a male or female child hence the $\frac{1}{2}$. The child of either of these two unions has $s \geq .75$ so it is in state 1.

For male high school graduates the transition matrix is

$$B_{11} = \frac{1}{2} \begin{pmatrix} \alpha_{11}p_{11} + \alpha_{12}p_{12} + \alpha_{14}p_{14} + \alpha_{15}p_{15} & \alpha_{21}p_{21} + \alpha_{24}p_{24} & 0 \\ \alpha_{13}p_{13} + \alpha_{16}p_{16} & \alpha_{22}p_{22} + \alpha_{25}p_{25} & \alpha_{31}p_{31} + \alpha_{34}p_{34} \\ 0 & \alpha_{23}p_{23} + \alpha_{26}p_{26} & \alpha_{32}p_{32} + \alpha_{33}p_{33} + \alpha_{35}p_{35} + \alpha_{36}p_{36} \\ \alpha_{11}q_{11} + \alpha_{12}q_{12} + \alpha_{14}q_{14} + \alpha_{15}q_{15} & \alpha_{21}q_{21} + \alpha_{24}q_{24} & 0 \\ \alpha_{13}q_{13} + \alpha_{16}q_{16} & \alpha_{22}q_{22} + \alpha_{25}q_{25} & \alpha_{31}q_{31} + \alpha_{34}q_{34} \\ 0 & \alpha_{23}q_{23} + \alpha_{26}q_{26} & \alpha_{32}q_{32} + \alpha_{33}q_{33} + \alpha_{35}q_{35} + \alpha_{36}q_{36} \end{pmatrix}$$

For male non-high school graduates the transition matrix is

$$B_{12} = \frac{1}{2} \begin{pmatrix} \alpha_{41}p_{41} + \alpha_{42}p_{42} + \alpha_{44}p_{44} + \alpha_{45}p_{45} & \alpha_{51}p_{51} + \alpha_{54}p_{54} & 0 \\ \alpha_{43}p_{43} + \alpha_{46}p_{46} & \alpha_{52}p_{52} + \alpha_{55}p_{55} & \alpha_{61}p_{61} + \alpha_{64}p_{64} \\ 0 & \alpha_{53}p_{53} + \alpha_{56}p_{56} & \alpha_{62}p_{62} + \alpha_{63}p_{63} + \alpha_{65}p_{65} + \alpha_{66}p_{66} \\ \alpha_{41}q_{41} + \alpha_{42}q_{42} + \alpha_{44}q_{44} + \alpha_{45}q_{45} & \alpha_{51}q_{51} + \alpha_{54}q_{54} & 0 \\ \alpha_{43}q_{43} + \alpha_{46}q_{46} & \alpha_{52}q_{52} + \alpha_{55}q_{55} & \alpha_{61}q_{61} + \alpha_{64}q_{64} \\ 0 & \alpha_{53}q_{53} + \alpha_{56}q_{56} & \alpha_{62}q_{62} + \alpha_{63}q_{63} + \alpha_{65}q_{65} + \alpha_{66}q_{66} \end{pmatrix}$$

For female high school graduates the transition matrix is

$$B_{21} = \frac{1}{2} \begin{pmatrix} \alpha_{11}P_{11} + \alpha_{21}P_{21} + \alpha_{41}P_{41} + \alpha_{51}P_{51} & \alpha_{12}P_{12} + \alpha_{42}P_{42} & 0 \\ \alpha_{31}P_{31} + \alpha_{61}P_{61} & \alpha_{22}P_{22} + \alpha_{52}P_{52} & \alpha_{31}P_{31} + \alpha_{43}P_{43} \\ 0 & \alpha_{32}P_{32} + \alpha_{62}P_{62} & \alpha_{23}P_{23} + \alpha_{33}P_{33} + \alpha_{53}P_{53} + \alpha_{63}P_{63} \\ \alpha_{11}q_{11} + \alpha_{21}q_{21} + \alpha_{41}q_{41} + \alpha_{51}q_{51} & \alpha_{12}q_{12} + \alpha_{42}q_{42} & 0 \\ \alpha_{13}q_{13} + \alpha_{16}q_{16} & \alpha_{22}q_{22} + \alpha_{52}q_{52} & \alpha_{31}q_{31} + \alpha_{43}q_{43} \\ 0 & \alpha_{32}q_{32} + \alpha_{62}q_{62} & \alpha_{23}q_{23} + \alpha_{33}q_{33} + \alpha_{53}q_{53} + \alpha_{63}q_{63} \end{pmatrix}$$

For female non-high school graduates the transition matrix is

$$B_{22} = \frac{1}{2} \begin{pmatrix} \beta_{41}P_{41} + \beta_{42}P_{42} + \beta_{44}P_{44} + \beta_{45}P_{45} & \beta_{51}P_{51} + \beta_{54}P_{54} & 0 \\ \beta_{43}P_{43} + \beta_{46}P_{46} & \beta_{52}P_{52} + \beta_{55}P_{55} & \beta_{61}P_{61} + \beta_{64}P_{64} \\ 0 & \beta_{53}P_{53} + \beta_{56}P_{56} & \beta_{62}P_{62} + \beta_{63}P_{63} + \beta_{65}P_{65} + \beta_{66}P_{66} \\ \beta_{41}q_{41} + \beta_{42}q_{42} + \beta_{44}q_{44} + \beta_{45}q_{45} & \beta_{51}q_{51} + \beta_{54}q_{54} & 0 \\ \beta_{43}q_{43} + \beta_{46}q_{46} & \beta_{52}q_{52} + \beta_{55}q_{55} & \beta_{61}q_{61} + \beta_{64}q_{64} \\ 0 & \beta_{53}q_{53} + \beta_{56}q_{56} & \beta_{62}q_{62} + \beta_{63}q_{63} + \beta_{65}q_{65} + \beta_{66}q_{66} \end{pmatrix}$$

Define $B_1 = (B_{11}, B_{12})$ and $B_2 = (B_{21}, B_{22})$, then the complete transition matrix is

$$B = \begin{pmatrix} B_1 & B_2 \\ B_1 & B_2 \end{pmatrix}$$

4. Calculations

The simulations will be run for three assumptions about the graduation parameters. The first will use the graduation rates of the white population in the NLSY97 sample without making any adjustments. The second will scale all the parameters so that graduation rates are 75 percent of the sample rates. The third will scale the parameter for families where at least one parent has more than 12 years of education by 95 percent, and families where both parent have less than 12 years of education by 63 percent. This reflects the assumption the lower educated families are more likely to be single parent households and thus the NLSY97 sample overstates the graduation rate for that group. Some of the reports in the literature suggest that children from

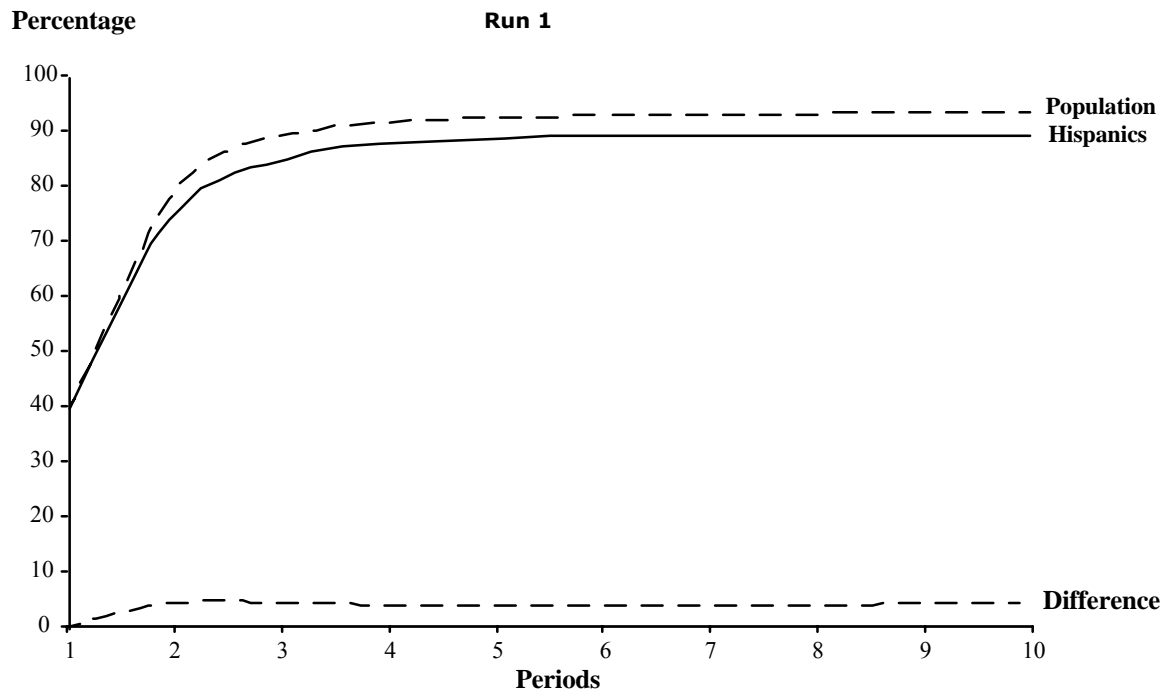
middle class families are 1.5 to 2.5 times more likely to graduate from high school than children from lower class. I choose a factor of 1.5 to scale the graduation rates.

The simulation is started with the first generation born in the United States. There are two reasons for this decision. First, this was the cohort we used to calibrate the parameters. Second, it is hard to evaluate the education of the generation born in Mexico. In Mexico, students who are not going to college end their formal education at *Segundaria*, which typically involves nine years of schooling. Those students who are bound for college go to *Preparatoria* for an additional three years. The difference in education systems can lead to misunderstandings. In the United States a person with only nine years of education has failed. In Mexico, this is may be a person who has completed his or her course of study and does not plan to attend college.

It was assume for the initial conditions of the first and second run was that only forty percent of the US born Hispanic cohort had more than 12 years of education. The reason was to see if there would be a similar dramatic increase in education as was observed for the children of the generation born in Mexico for the parameter values of the second generation. The third run used the parameter values of the second generation as the initial conditions.

The curve labeled "Population" is the percent of the cohort that has finished high school. The curve labeled Hispanic is the percent of the cohort that has finished high school and has not intermarried. This is not strictly correct, as the formal definition in the model for that group is an individual whose ancestry is 75 percent or more Hispanic. However, in the early period, this is a group that has not intermarried.

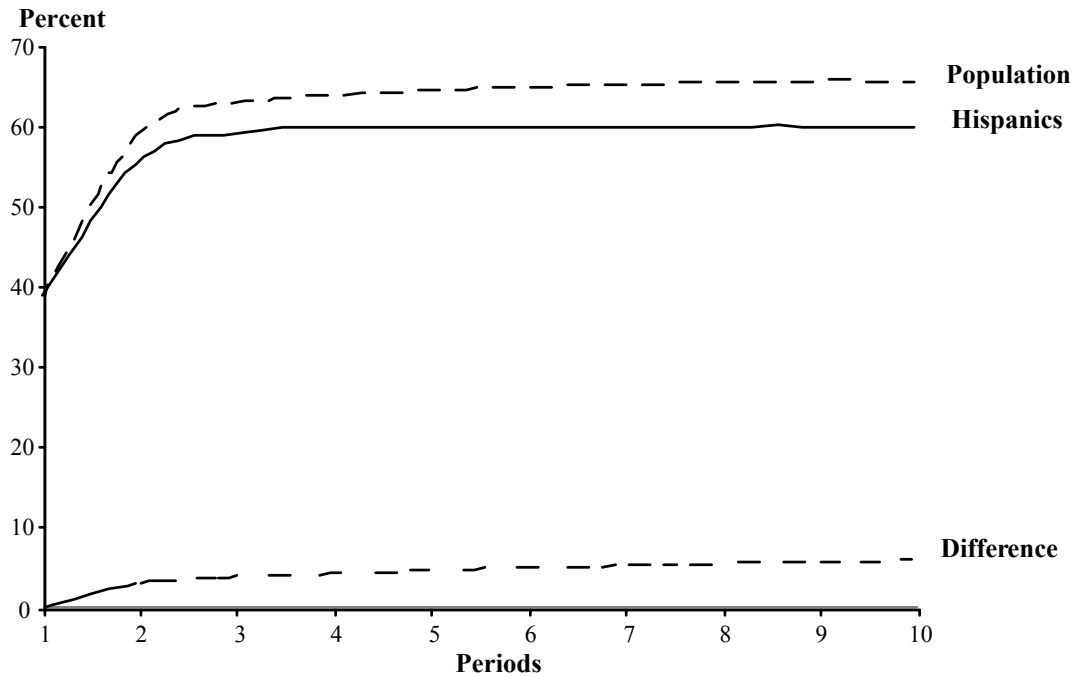
F I G U R E 1



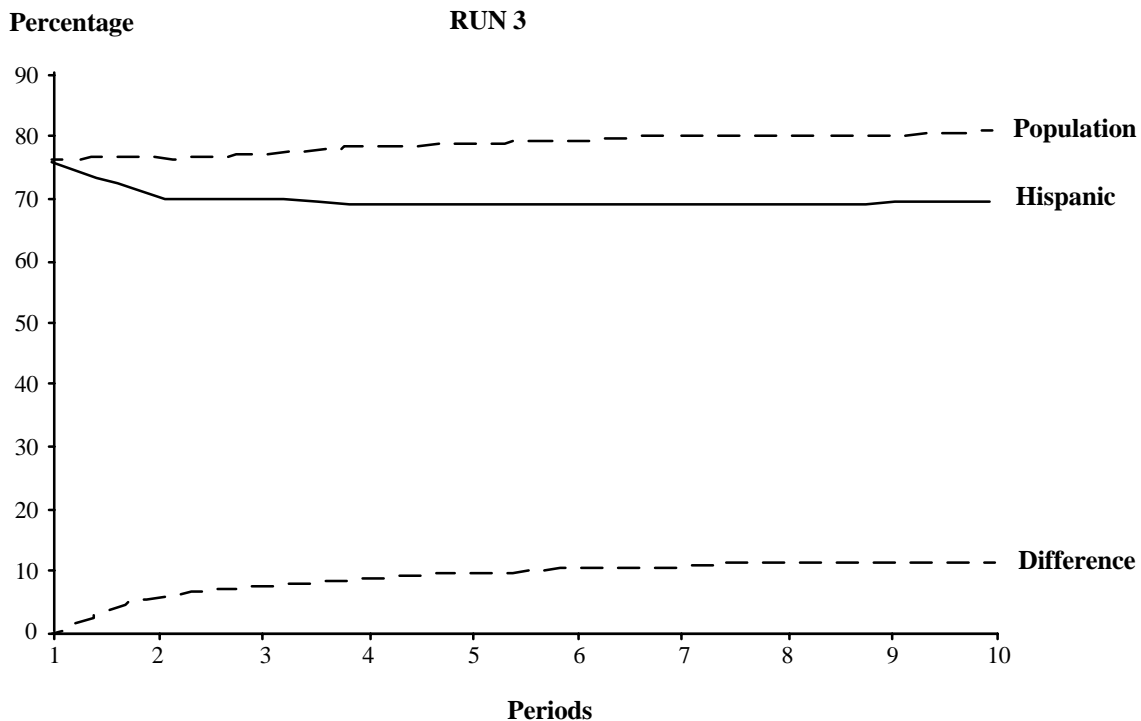
As seen in Figure 1 there is a dramatic increase for the cohort population and the portion of the cohort population that has not intermarried. It reaches equilibrium of around 90 percent for the entire cohort and 85 percent for the part of the cohort that has not intermarried. The very high level of high school completion may reflect the fact that our parameters were derived from two parent households. If the 2003 survey, which has just been released, confirms these initial parameter values, then we may be able to conclude that there is a substantial fraction of the Hispanic population that is assimilating very well. Since the census reports that about sixty percent of Hispanics are in two parent households, the number is not trivial.

F I G U R E 2

Run 2



For the second simulation run, the graduation parameters were scaled to 75 percent of the NLSY97 sample values. As seen in Figure 2 there is a dramatic increase in the percentage of high school graduates for the cohort population and the portion of the cohort population that has not intermarried. It reaches equilibrium of around 60 percent for the entire cohort and 55 percent for the part of the cohort that has not intermarried. The difference of about five percent persists.

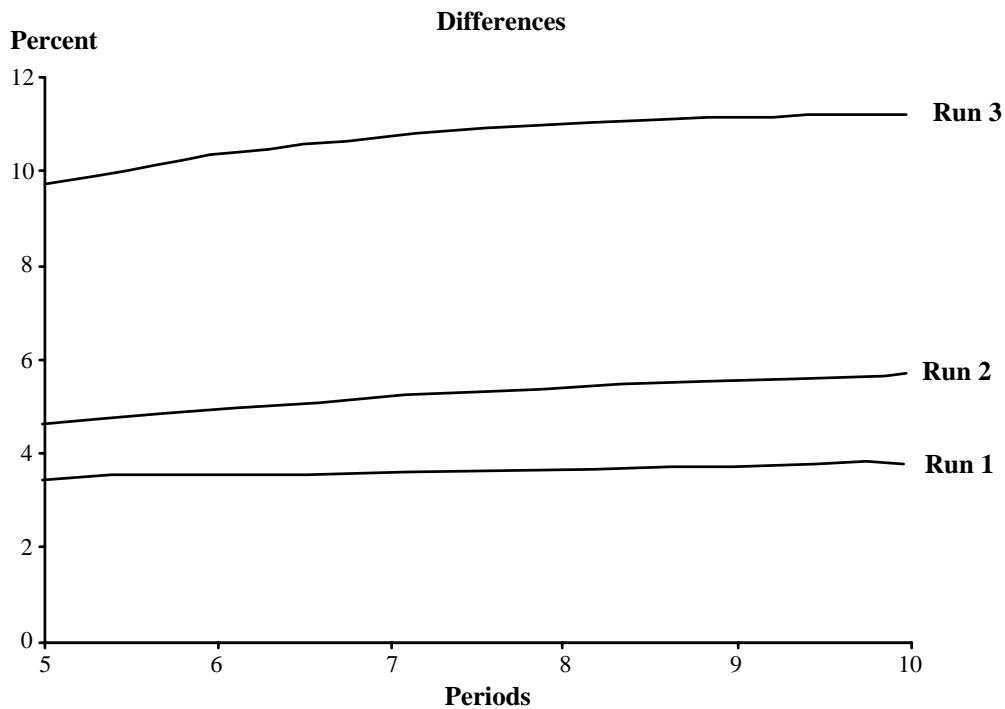
F I G U R E 3

For the third simulation run, the graduation parameters were scaled to 95 percent of the NLSY97 sample values for families where at least one parent has more than 12 years of education, and by to 63 percent for families where both parents have less than 12 years of education. The simulation is started the values given by Suro and Passel (2003) in which 77 percent of the second generation (first generation born in the United States) had a high school education. As can be seen in Figure 3, the rate of high school graduation for the entire cohort continues to improve and approaches the equilibrium level of 82 percent. The education of the Hispanics who have not intermarried drops by almost six percent in the second period and then continues to decline slowly and eventually reaches an equilibrium level of 71 percent.

The fact that, for the first generation, the intermarriage rate is only about eight percent and the initial high increase in education for the second generation means that there are a large number of second generation Hispanics who have finished high school. However, that generation has a much higher rate of intermarriage than the first generation. Since most of the intermarriage occurs among high school graduates and substantial fraction of the children of second generation are Hispanic high school graduates will have a non-Hispanic parent. Since the loss from intermarriage is not replaced by the children whose parents are not high school graduates, there is a decline in the portion of the cohort who have not intermarried and who have completed high school.

Suro and Passel (2003) report a decline of about two percent for the third generation and Huntington (2004) reports an amazing 18.5 decline for Mexican Americans. While these numbers are very different, it should be remembered that even the reported graduation rates for whites range from 86.4 percent in New Jersey to 62.4 in Georgia.⁸ So the reported rates may vary widely depending on the sample.

F I G U R E 4



Note that I am not making any assumption as to the number of individuals with Hispanic heritage who report themselves to be Hispanic. Some white Hispanics with a non-Hispanic last name may choose to report themselves as non-Hispanic and some individuals with a small fraction of Hispanic heritage may choose to claim to be Hispanic.

The question of ethnic identity is complicated and is likely to change as a result of the recent Supreme Court ruling in *Grutter v. Bollinger* and *Gratz v. Bollinger*, which allows schools to use race and ethnicity in admissions.

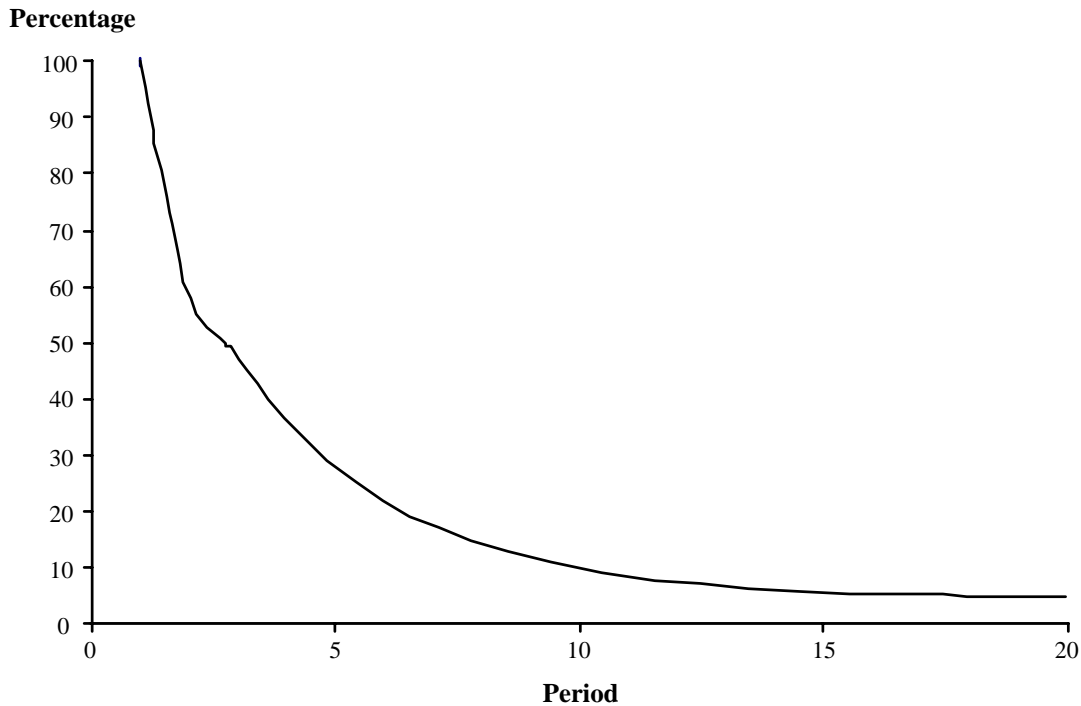
What the simulations show is that the academic performance of Hispanics who have not intermarried appears to stagnate or even decline after the first generation even though the entire cohort itself continues to improve. As seen in Figure 4, the difference between the performance of Hispanics who have

⁸ See Swanson (2004).

not intermarried and the cohort performance remains stable even after five periods. The difference depends on the scaling of the graduation parameters.

Figure 5 below gives the fraction of the population that have seventy-five or more percent Hispanic ancestry. Note that this group does not disappear, but rather reaches an equilibrium around five percent. The reason is that members of the cohort whose Hispanic ancestry is less than seventy-five percent marry Hispanics outside the cohort and this process keeps the Hispanic portion of the cohort from going to zero.

F I G U R E 5



If the level of education of the entire cohort is the same as the population and the level of education of the segment of the population that has not intermarried is less than the population, it follows that the level of education of segment of the population that has intermarried must be higher. The percentage of the high school graduates from mixed marriages should be greater than the fraction of the entire population that are high school graduates.

The question that remains is how to test this hypothesis. To test the hypothesis directly it is necessary to measure the characteristics of a group that has chosen not to identify itself as Hispanic. Constructing such a data set would be difficult. However, the model has a prediction that should not be difficult to test. Duncan and Trejo (2003) have reported the result that that Hispanics with a non-Hispanic spouse have higher educational attainments

than Hispanics with a Hispanic spouse. The NLSY97 data I looked at is consistent with this result and that the non-Hispanic spouse is as well or better educated than the Hispanic spouse. Inasmuch as the education of the children is correlated to the education of the parents, this would suggest the children of a mixed marriage should have a level of education that is higher than the population of the United States population since their parents are better educated than average.

The 2001 survey of educational outcomes is too incomplete to answer that question in a definite manner, as a large fraction of the population was 18 or younger at the time of the survey. However, the graduation rate of those in the sample over 18 years of age for mixed marriages was 90.7 percent and the graduation rate for whites for that portion of the sample that was 19 or older was 89.9 percent. Swanson (2004) reports a national average graduation rate of 68 percent. The 2003 survey of educational outcomes may give us a more complete sample that can test that hypothesis. All the members of the sample are 19 years old or older. Parenthetically, note that this sample should contain information as to the number of third generation Hispanics that are going to college.

5. Remarks

The received wisdom is that one of the reasons Hispanics have a lower level of high school and college education than the rest of the population is due to failure to assimilate. This model suggests the opposite. The reason for the lower level is because educated Hispanics assimilate very easily into the population and their offspring lose their Hispanic identity. As a result, the level of education reported among individuals who identify themselves as Hispanics will be less than the population as a whole.

This model is very simple with very few assumptions. It tracks the data and the intuition behind the dynamics is compelling.

The impact of this demographic phenomenon on Mexico may be very interesting. Although Mexico prides itself on being a Mestizo nation, the upper middle class is mostly white. The size of this elite has been stable over the last 100 years at about six to nine percent of the population. Given that Mexico has had very little European or American immigration, it can be demonstrated mathematically that such a population distribution is stable only if there is very little intermarriage between whites and Mestizos.

Social mobility is limited in Mexico relative to the United States. English has become the equivalent of Mandarin in Mexico. It is very difficult to graduate from any of the top schools in Mexico or to obtain a position above middle management without being proficient in English. Thus, unless the

parents can afford to provide an education at a school where English is taught well, entry into the Mexican elite is limited.

On the other hand the United States is an open society. If the numbers suggested by my preliminary calculations turn out to be correct after we examine the NLDY97 2003 survey, then there will be a substantial number of Anglo-Hispanics with above average human capital in the population. Further, this is a group, that because of affirmative action, will have privileged access to the schools that provide entry to the American elite. By 2050, the Anglo-Hispanic elite in the United States could be larger than the white elite in Mexico. An interesting question is how these groups will interact.

There are reports that some Hispanics who return to Mexico in management positions with American firms have had some difficulties. Part of the problems is that some of these individuals speak poor Spanish, and there is ambiguity as to their social status.⁹

However, as the Anglo-Hispanic elite acquires well-defined status in the United States, this population could be very influential in Mexico. Alternatively, the Anglo-Hispanic elite could become an important lobby for Mexico's interests in the United States. The degree to which one or both of these alternatives happen depends to some degree on the policies of the United States and Mexico. The key is probably languages. It is in the interest of Mexico that the Anglo-Hispanic population not lose proficiency in Spanish, as they appear to be doing, and it is in the interest of the United States to increase English proficiency among the Mexican population. The market forces that drive Mexican immigration to the United States are so powerful that state and local governments flagrantly ignore the immigration laws; thus it is unlikely that the immigration from Mexico will be diminished in the foreseeable future.

Huntington's thesis is incomplete; the nature of the United States will be changed to some degree by the Mexican immigration to the United States as it has by most other immigrant groups, but not necessarily in the manner Huntington supposed. Emigration to the United States, NAFTA and opening the economy to foreign investment have changed Mexico in a manner that would have been difficult to predict fifteen years ago. It is only necessary to walk into a Wal-Mart or look at the magazine rack in an upper middle class grocery store in Mexico City so see the changes that have occurred since NAFTA.

⁹ See Martinez and de la Torres (2003)

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