

FERTILITY ASSIMILATION BEHAVIOR OF LOS ANGELES IMMIGRANTS

STUART SWEENEY AND KATHRYN GRACE

ABSTRACT. The perceived high fertility levels among foreign-born women combined with historically large immigrant flows into California have been an ongoing source of concern among California voters. Those concerns have manifest in several waves of 'anti-immigrant' propositions, and are embedded in broader issues related to whether immigrants are assimilating. But the observed high foreign-born fertility levels may be an artifact of the summary measures used in published comparisons. We analyze parity-specific birth intervals and differentiate between pre-immigration and post-immigration births. We also develop comparable birth interval models for the source countries of the immigrants. The results are then combined using posterior predictive comparisons to provide a more complete assessment of fertility assimilation. Our research provides new insights into foreign-born fertility behavior, but more generally pioneers a new approach to studying the fertility assimilation process by pooling information from source countries and the receiving region.

1. INTRODUCTION

The notion of cultural assimilation is embedded in US folklore through the "melting pot" – the myth of seamless integration of individuals across cultures, backgrounds and languages into a homogenous monoculture (Alba & Nee 1997, Alba 1999, Etzioni 2006). As such, academic research on immigrant assimilation is often drowned out by the roar of public opinion and political gaming sparked by the presence of large, recent, or expanding foreign-born populations. In California, and Los Angeles specifically, the historically high levels of immigration have been a source of public outcry, and have sparked political movements culminating in anti-immigrant propositions such as 187 (restricted public services), 209 (removed affirmative action for public education), and 227 (removed bilingual education). Still, recent scholarship has actively explored the concepts of multiculturalism and assimilation and has begun to deconstruct the melting-pot idea.

The goal in this paper is **to study the fertility assimilation patterns in Los Angeles of foreign-born communities with particular emphasis on those originating in Central America**. Each regional or national culture defines norms for work habits, education, the status of women, diet, exercise, and many other attributes. Those norms are then reflected in demographic and health measures in terms of education rates, job related migration and mobility, age/cause specific morbidity and mortality, and fertility/contraceptive use. Because the immigrant contribution to US fertility is substantial,¹ is expected to continue growing, and may impact other aspects of assimilation – namely educational and socioeconomic status – the study of immigrant fertility behaviors is particularly compelling. However,

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¹Nearly a quarter of US births are attributable to Hispanic women, for example (Parrado & Morgan 2008, Martin, Meyricke, O'Neill & Roberts 2006).

while there is a small recent literature focused exclusively on fertility assimilation of immigrants, much of the assimilation research treats fertility as a minor component and consequently measures it poorly. Furthermore, related research is almost exclusively focused on the study of Mexican immigrants or Mexican-origin individuals (Parrado & Morgan 2008, Frank & Heuveline 2005, Bean, Swicegood & Berg 2000, Carter 2000); citing the large size of the immigrant population and the high fertility, pro-natalist origin culture as motivations for the restricted analytic sample. Yet, other regions/cultures also contribute significantly to the US immigrant stream and have unique fertility characteristics that likely impact fertility assimilation. Comparing Mexico to other major immigrant source regions such as Southeast Asia, East Asia, and Central America: several countries in the first realm have fertility rates twice as high as Mexico, the second realm is characterized by fertility rates half those of Mexico, and the last realm includes Guatemala with the highest fertility rate in the Western Hemisphere. (PRB 2007).

The demographic literature is our point of departure. Fertility assimilation, needs to be situated between the **source** region/country and **receiving** region/country. The immigration stream links the two and there are a host of processes – including informal networks, organizations, family ties – that mediate the transition from one country to another. In traditional multiregional demographic models the fertility component is embedded as an instantaneous transition (if a woman moved from region A to B, her fertility *schedule* immediately shifts to the schedule in region B) (Rogers 1975, Rogers 1995). This is completely at odds with existing research which shows sustained differences in fertility levels among the foreign-born and native-born populations over generations (Heim & Austin 1995, Hill & Johnson 2002). Even the most recent literature has used relatively weak measures of fertility. The work by Heim & Austin (1995) and Hill & Johnson (2002) relies on crude aggregate summary measures such as the total fertility rate (TFR) or children ever born (CEB). The former is an aggregate period measure that projects completed family size from observed age-specific fertility patterns whereas the second is a direct measure of completed family size, for women of a given age. Neither measure is well-suited to the fertility assimilation questions since they fail to isolate the births that occurred in the source region (pre-immigration) from those in the receiving region (post-immigration). A more recent study (Parrado & Morgan 2008) merges multiple waves of current population statistics to capture intergenerational shifts, but still relies on CEB and has no spatial resolution (results are for the whole country). The spatial resolution in both source and receiving regions is critically important since it is necessary to isolate the social context of fertility change. Recent work on conceptualizing fertility metrics suggests that they need to be far more nuanced and attuned to the research questions being studied (Ní Bhrolcháin 1992, Baschieri & Hinde 2007, Grace & Sweeney n.d.).

2. RESEARCH QUESTIONS AND DESIGN

Our approach, therefore, is to proceed from questions that adequately state the nature of source/receiving region delineation to identification of methods/metrics and data sources that can capture changes in fertility at spatial resolutions relevant to the social context of that change. The research questions include:

- Are fertility levels of immigrant communities from source region R converging towards white, native-born fertility levels in Los Angeles?
- Are fertility levels of immigrant communities from source region R diverging from the prevailing levels in source region R ?

- What is the effect of individual and neighborhood factors on individual fertility outcomes?

While we would like to address these questions for a large set of source regions, we will restrict our focus in this paper to immigrants from Central America. We choose that region as an initial test case because there is a relatively large immigrant community from Central America living in Los Angeles and identifiable in our data source, and the Central American region represents a high fertility regime. From a statistical standpoint, the large differences in fertility between the source and receiving region will make it easier to isolate fertility assimilation effects.

Data will come from two primary sources: 1) the Los Angeles Family and Neighborhood Survey (L.A. FANS) – to capture fertility dynamics in the receiving region, and 2) Demographic and Health Surveys (DHS)/ Reproductive Health Surveys (RHS) from the source regions/countries. The L.A. FANS is a two-wave longitudinal data set based on a stratified random sample of Los Angeles neighborhoods. The neighborhoods are operationally defined by census tracts which were selected randomly from three strata defined by poverty status: not poor, poor, or very poor. The resulting sample from the first wave includes 65 neighborhoods and approximately 2,500 households. Within sampled households, the survey was administered to both the head of household and the primary care giver (this is important since it ensures a large sample of women). The first wave of the panel was administered in 2000-02 and the second wave was completed in 2008. A public use sample is available for the wave and a preliminary public use sample was recently released for the second wave. The second wave follow ups with all of the original respondents (even if they have left the country) and added a new set of respondents to the survey.

These data contain information on fertility (birth month/year for up to 16 children) and reproductive health, country of birth, time spent in the US (month/year of entry into the US), education levels of father and mother, work / residential histories for two years prior to the survey, and neighborhood characteristics. The inclusion of both neighborhood (macro-level) and individual (micro-level) characteristics enables the development of a multi-level model where individuals act within their particular community context. The multi-level structure effectively incorporates different levels of social and cultural factors to reflect the complexity of family planning decision-making (Pebbley, Goldman & Rodriguez 1996, Goldstein 2003, Lindstrom & Munoz-Franco 2005). While the first wave of the data has been used in education and healthcare research, to our knowledge, none of the data has been used to analyze fertility or reproductive health determinants. The source region (immigrant sending region) resolution in this data set is as good as can be expected from the sample size. The source regions are defined using the seven World Bank regions with the exception that Mexico and Central America ² are each separated out.

The second data source is the Demographic and Health Surveys (DHS) and Reproductive Health Surveys (RHS). These surveys, facilitated with the support of US AID and the CDC, provide the most current and complete set of individual health and reproductive histories in many developing countries. The DHS have similar details in terms of birth histories, reproductive health, age, education, and contextual data. The DHS/RHS contain samples, on approximately the same time frames, for the *primary* source countries in Central America sending to Los Angeles.

²Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Belize

The analysis of the data will follow recent work by Baschieri & Hinde (2007) in fitting discrete time multi-level hazard models to a given parity transition; the models allow for censoring and unobserved heterogeneity. We will fit separate models to the L.A.FANS and to each of the individual DHS countries using fully Bayesian analysis. Bayesian modeling techniques will allow us to better capture the uncertainty in the predictive posterior distribution (Gelman & Hill 2008, Gelman & Pardoe 2006). To answer the first research question regarding foreign-born and native-born differences and convergence, we only need the L.A. FANS fitted model. To answer the second question, diverging from source region, we need to compare results from models fit to different country data sets. While the L.A. FANS identifies encodes Central America as a *region* – not by individual country – our results based on survey data from El Salvador, Guatemala, Honduras, and Nicaragua should still provide robust results. The immigration streams are highly uneven and the Central American countries sampled by the DHS are the same ones that are most represented among Central American immigrant communities in Los Angeles. We use the 2000 Census data to identify the proportion of foreign-born from the Central American source countries that appear in the 65 sampled L.A. FANS tracts. We will then fit similar discrete-time hazard models to the DHS data for each sending country. After we estimate the model parameters, we can sample the posterior predictive distributions using country specific weights derived from the relative proportion of that country in the sampled tracts. This type of posterior predictive comparison takes advantage of recent advances in statistics and has not been used for cross-country fertility analysis to our knowledge.

3. PRELIMINARY DESCRIPTIVE RESULTS

To motivate the research we provide some preliminary descriptive plots in Figure 1. Standard summary fertility measures such as TFR or CEB conflate pre-immigration and post-immigration fertility behavior. As such, they are poor indicators of the fertility behavior of foreign born women during their residence in the U.S. Parity specific birth intervals provide a much better indication of fertility behavior since it isolates the timing decision that occurred while living in a particular cultural context and at a particular stage of a woman’s fertility career. In the plots below we summarize the differences in parity specific birth intervals for three groups: native born women (red line), foreign born women where the interval applies to a child born in the U.S. (blue line), and foreign born women where the interval applies to a child born outside the U.S. (black line). Since the foreign born in the plot are from higher fertility countries (Mexico and Central America), we expect the distribution for foreign born children (black line) to lie to the left of the distribution for native born children from native born mothers. Our hypothesis is that if fertility behavior is consistent with assimilation, the birth interval distribution for native born children of foreign born mothers (blue line) should lie between the other two distributions. This is exactly what we see in figure 1. In fact, the native born birth interval distributions are almost indistinguishable for foreign born (blue line) and native born (red line) mothers.

Of course, as with any summary display, the underlying distribution may not be the same in terms of age structure, education, and other factors associated with parity-specific birth timing. The discrete time hazard models will allow us to control for these compositional differences and will yield parameter estimates of interest in their own right. Those results will be produced prior to the PAA meeting, and the models will also be used to generate

the comparisons using posterior predictive distributions where the compositional effects have been removed.

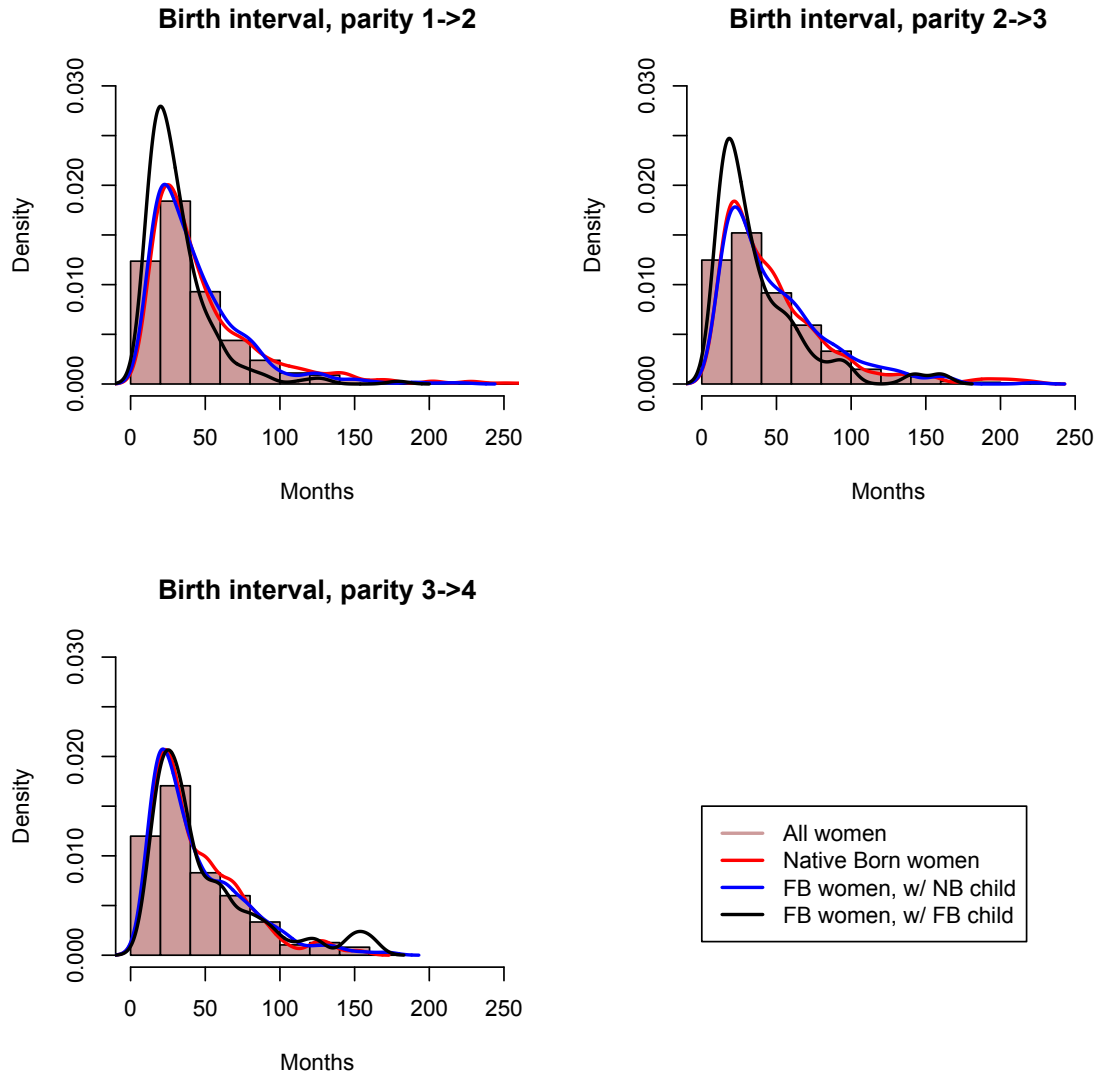


FIGURE 1. Birth interval distributions by parity.

Source: Authors calculations using the public use files of the Los Angeles Family and Neighborhood Survey, Wave 1

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DEPARTMENT OF GEOGRAPHY, UNIVERSITY OF CALIFORNIA AT SANTA BARBARA

E-mail address: sweeney@geog.ucsb.edu

E-mail address: grace@geog.ucsb.edu