White-Hispanic Differences in Meeting Lifetime Fertility Intentions

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Abstract

Using panel data from the National Longitudinal Survey of Youth 1979 cohort, I explore whether higher fertility among Hispanics compared with Whites reflects the preferences of individuals within those groups, and how the process of exceeding or falling short of intentions over the life course helps explain fertility differentials between the two groups. Although Hispanics come closer to achieving early-life parity intentions in the aggregate (Hispanic women fall short by a quarter of a birth, compared to more than two-fifths for Whites), at the individual level, they are not more likely to meet their intentions (34% of Hispanic women achieve their desired parity, compared with 38% of Whites). Both Whites and Hispanics are very likely to fall short of intentions (39% of Hispanic women and 42% of White women). Hispanics have higher parity than Whites both because they intend to have more children and they are more likely to exceed their intended parity. Hispanic-White differences in the likelihood of exceeding intentions seem to be related to acculturation and immigration, religious differences, and an earlier age-schedule of childbearing.

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Introduction

Differences in fertility rates across ethnic groups are well documented, with Hispanic women bearing more children than non-Hispanic White women, but the reasons for these differences remain unclear (Bean & Tienda 1987; Martin et al. 2009). The Hispanic population is growing dramatically and most of this growth currently comes from fertility rather than migration. Understanding racial-ethnic differences in fertility is important for understanding American fertility more broadly, since race-ethnicity is one of the primary axes along which fertility behaviors vary. The presence of higher fertility subgroups is one reason cited for the fact that the U.S. is able to maintain replacement-level fertility while other developed countries fall short (Kohler et al. 2006; Preston & Hartnett 2010). Here, I explore whether differences in fertility levels across ethnic groups reflect the preferences of individuals in those groups. I also show how ethnic differences in fertility levels can be explained by differences in intended parity and the likelihood of meeting parity intentions.

It may be that higher fertility among Hispanics reflects higher fertility intentions. It is commonly assumed that Hispanics have a preference for larger families, and this assumption is frequently applied when socioeconomic factors fail to fully explain differences in family-related behaviors between groups. While some research shows stronger "familistic" orientation among Hispanics, there is a lack of research examining how fertility preferences correspond with outcomes, for Hispanics compared with other groups.

On the other hand, prior research has demonstrated that unintended pregnancy is more common among Hispanic women, compared with Whites, so higher fertility could be

a result of these pregnancies. We might expect that because of social and economic disadvantages, Hispanics might face more obstacles to achieving their childbearing goals. It is an open question whether ethnic differences in fertility levels are the result of differing preferences or whether some groups are systematically disadvantaged in trying to carry out their childbearing intentions.

The ability to meet intentions is important from a well-being perspective. One component of meeting childbearing intentions – unintended pregnancy – is acknowledged as part of Healthy People 2010 (U.S. Department of Health and Human Services 2000). This policy document cites the reduction of unintended pregnancy as a U.S. public health goal, due to the fact that unintended pregnancy is associated with poorer health outcomes for children and health risks for the mother (Sable & Wilkinson 2000; Singh et al. 2003; Barber & East 2011; Baydar et al. 1997a; Baydar et al.; 1997b; Brown and Eisenberg 1995). There has been relatively little research on the prevalence and consequences of the converse situation – unmet desire for children – but infertility has been linked with a variety of negative outcomes, including stress and poorer marital quality (Andrews et al. 1991).

In this paper, I focus on "fertility intentions" or "parity intentions" expressed in early life (meaning the total number of children that young women and men say they eventually want to have) and the likelihood of ultimately meeting these intentions. Fertility intentions are considered the key determinant of fertility in low fertility settings, where the means of controlling fertility are accessible (Barber 2001; Bongaarts 2001, 1992; Rindfuss, Morgan, and Swicegood 1988; Schoen et al. 1999; Westoff & Ryder 1977; Remez 2000).

BACKGROUND

The centrality of intentions to fertility behavior is found in several theoretical models of fertility decision-making. Prior fertility studies have applied Ajzen and Fishbein's Theory of Planned Behavior which argues that intentions are the main determinant of behavior (along with behavioral control) (2005; Fishbein & Ajzen 1975). The economic approach to fertility behavior also assumes that couples weigh the potential costs and benefits of each additional child and act on this calculation (Becker 1991; Becker and Barro 1988). Intentions are central to the proximate determinants framework for low-fertility settings developed by Bongaarts (2001) and Morgan (2003). This model treats intentions as the main determinant of achieved fertility and identifies several factors that can cause individuals to either exceed intentions or fall short of them, such as unwanted births or the lack of an acceptable partner.

Prior research on meeting fertility intentions finds very different patterns at the individual level compared with the aggregate level. It is common in low fertility populations for women to fall somewhat short of intentions in the aggregate, as Berrington (2004) found in the U.K., but other studies in various countries have found a high level of correspondence between fertility intentions and achieved fertility at the aggregate level (Monnier, 1989; Van de Giessen, 1992, Quesnel-Vallee & Morgan 2003; O'Connell & Rogers 1983). However, this correspondence at the aggregate level does not generally seem to be due to the overwhelming achievement of fertility intentions at the individual level. On the contrary, it seems that a high frequency of both positive and negative "errors" at the individual level balance one another out. For example, research by Morgan & Rackin (2010) found that a high proportion of Americans (57% of women and 64% of

men) either exceed their long-term fertility goals or fall short of them. Throughout this paper, the term "overshooting" intentions is used to refer to the situation of having more births than one intended in early life (the twenties) and the term "undershooting" intentions refers to having fewer births than one intended in early life.

The fact that a large fraction of individuals either undershoot or overshoot their early life fertility intentions, can be linked, in part, to changes in preferences over the life course. Fertility intentions depend on expectations of future circumstances (related to partnership situation, economic resources, and other factors) and intentions change over time, so the measurement and meaning of intentions is complex.   Nevertheless, it seems that people do have underlying preferences that persist: intentions are powerful predictors of fertility behavior at the individual level, compared with other variables, and this seems to be the case even when intentions apply to a long time frame (Remez 2000; Rindfuss, Morgan, and Swicegood 1988; Thomson, et al. 1990; Thomson 1997; Trent & Crowder 1997; Schoen et al. 1999; Westoff & Ryder 1977; Wilson & Bumpass 1973).

Very little of the existing research on the achievement of fertility intentions includes analyses by race or ethnicity. However, prior research does point to ethnic differences in unintended pregnancies and births, which can lead to overshooting intentions. A higher proportion of pregnancies to Hispanic women are unintended, compared with White women (54% and 40%, respectively in 2001), and for both groups, about half of these pregnancies are carried to term (Finer & Henshaw 2006, Martin et al. 2009). In addition, research by Morgan & Rackin (2010) found that Black women were more likely to overshoot intentions and Hayford (2009) found that Hispanic women were more likely than non-Hispanic White women to reduce their fertility intentions over the

life course. To my knowledge, there is no existing research on the correspondence between fertility intentions and completed fertility for Hispanics in the U.S.

This paper also contributes to the literature on racial-ethnic differences in fertility by examining men as well as women. Most studies of fertility intentions are limited to women and prior research shows that female partners' intentions have a larger impact on fertility outcomes (Beckman et al. 1983). However, men's intentions also impact a couple's achieved parity (Thomson 1997; Schoen et al. 1999; Thomson et al. 1990). The intentions of male partners could play a particularly important role among Hispanics since men in this group might have more control over fertility decision-making than their White counterparts (Sable et al, 2009; Hirsch 2003).

I explore a number of factors that might explain differences between Whites and Hispanics in terms of their childbearing intentions and their likelihood of meeting intentions. While no clear theoretical framework exists for selecting potential explanatory factors, prior research has identified a number of factors that are likely to influence intentions and the likelihood of meeting intentions, and differ between Whites and Hispanics.

Socioeconomic status is likely to affect individuals' fertility intentions and whether they overshoot or undershoot intentions. Much of the existing research on socioeconomic status and fertility has focused on the role of opportunity costs in childbearing decisions, arguing that women who have more children simply have less to lose by having each additional child (Becker 1991). White women might choose to have fewer children because they have higher earning potential on average, and therefore bear a greater cost from shifting time from market work to childcare work. And, although couples with

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greater economic resources might theoretically be able to afford more children, wealthier couples spend substantially more money raising each child compared with couples with fewer means (Lino 2007).

Cultural differences between Whites and Hispanics might also help explain differences in fertility intentions and the degree of correspondence between intentions and achieved parity. Fertility has been shown to be responsive to cultural environment (Watkins 1990), and cultural differences are often cited as a reason that the fertility levels of Hispanics exceed those of Whites (Landale & Oropesa 2007). Cultural explanations for ethnic differences in behavior have tended to stress the importance of familism as a core element of the Hispanic culture, by which family roles and obligations are highly valued (Bean & Tienda 1987; Landale & Oropesa 2007; Vega 1995). Usually the assumption is that these cultural norms are brought from immigrants' sending countries and then are maintained within Hispanic families and communities in the U.S. These norms either disappear gradually as immigrants and their descendants become socially and economically integrated (according to the classical assimilation perspective). There is some empirical support for the assertion that Hispanics have stronger familistic orientations than U.S. Whites, as expressed through both attitudes and behaviors (Oropesa & Gorman 2000; Trent & South 1992; Sabogal et al. 1987; Koropeckyj-Cox & Pendel 2007; Molina & Aguirre-Molina 1994; Ford 1990; Minnis & Padian 2001; Sorenson 1985).

Differences between Whites and Hispanics in religious upbringing might also lead to differences in fertility intentions and the likelihood of meeting intentions. Religious participation may increase fertility intentions through the dissemination of a pronatalist

message, more "family-oriented" values, and more sex role segregation, all of which might increase the desire for children (Goldscheider and Goldscheider 1988; Thornton & Camburn 1989; Thornton 1985). Moreover, affiliation with Catholicism – which is more common among Hispanics – might be associated with overshooting intentions due to messages that discourage contraceptive use. The effect of religious participation might also differ across racial-ethnic groups. Prior research has found that the association between religiosity and premarital childbearing differs for Hispanics compared with Whites (Abrahamse et al. 1988). Similarly, research has found that the relationship between religious beliefs and coping differs for Blacks compared with Whites (Rosen 1982; Chatters et al. 2008).

Marital status is also likely to influence whether individuals meet fertility intentions. Although childbearing increasingly takes place outside of marriage, being married continues to be positively associated with parity and the realization of fertility intentions is higher for married compared with unmarried women (O'Connell & Rogers 1983). Hispanics marry earlier than Whites, but are less likely to be married at older ages (Landale & Oropesa 2004).

A more proximate determinant – the timing of births – is also likely to influence whether individuals are able to achieve childbearing intentions. Among couples or women who delay childbearing, some proportion will have fewer births than they intended due to subfecundity, which occurs at a range of ages and generally cannot be anticipated in advance. Conversely, the earlier individuals achieve their desired parity, the longer the period of exposure during which they are at risk for having an additional birth that would cause them to exceed their original intentions. Such births could be the result of

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unintended pregnancies that are carried to term or of revising intentions upwards.

Research by Morgan & Rackin (2010) found that those who initiated childbearing early

(by age 24) were much less likely to undershoot intentions and much more likely to

overshoot intentions.   Ethnic differences in the age pattern of childbearing are well

established: Pregnancy rates peak at ages 20-24 for Hispanic women compared with 25-29

for White women (Ventura et al. 2008; see also Burton 1990).

Data and Methods

The data for this paper came from the 1979 National Longitudinal Survey of Youth

(NLSY79), a large, nationally representative sample of the 1957-64 U.S. birth cohort. This

cohort was interviewed starting in 1979 when they were ages 15-21, and re-interviewed

every year or two years through their childbearing years and beyond (Zagorsky & White

1999). The NLSY is particularly useful for looking at the correspondence between

intentions and outcomes since the same respondents were followed through time and were

asked for their fertility intentions 16 different times. The most recent wave of data was

collected in 2008. No other nationally representative survey contains as detailed

information about fertility intentions and births throughout the reproductive life course.

Women and men from the 1979 cohort were divided into two ethnic groups:

Hispanics and non-Hispanic Whites (hereafter "Whites"). In order to simplify the analysis,

Blacks, Asians, and other groups were excluded. About one-quarter of Hispanic

respondents (and 2% of White respondents) were foreign-born. Since respondents were in

the U.S. before most family formation occured (most respondents are in their late teens at

the first survey), Hispanic immigrants were not separated from non-immigrants. Analyses

were not conducted by country-of-origin, since data on national origin was only available for those who were foreign born (a minority of the Hispanic sample). Most foreign-born Hispanic respondents were from Mexico (61%).

Several subsamples were dropped from the NLSY after the initial waves, which reduced the original sample by 26%. Of the remaining 6,922 respondents, another 1,674 (24%) were dropped for the analysis due to missing data on key variables (either early life fertility intentions, completed parity above age 42, or independent variables). In other words, of the respondents who could have been followed through to 2008, 76% were included in the analytic sample, with retention rates varying from 72% for Hispanic men to 80% for White women. Appendix A presents key background characteristics for the analytic sample and the full, original sample. Despite attrition and the loss of subsamples, the analytic sample appeared quite similar to the original sample. Most background characteristics were similar and the average intended parity in the analytic sample was almost identical to the full sample.

Early life parity intentions were based on the question, "Altogether, how many (more) children do you expect to have?" This number was added to any existing children to equal the total lifetime intended parity, for a respondent at a given age. The variable for early life intentions was equal to intentions expressed at age 22, or as close as possible to age 22, within the range of 19 to 25 (for 98% of respondents, this information was collected between ages 21 and 23). Following Morgan and co-authors, I chose an age that was old enough that respondents could offer an intended parity that was realistic and based on personal preferences (rather than societal norms) but was young enough that most

respondents had not yet completed childbearing (Quesnel-Vallee & Morgan 2003; Morgan & Rackin 2010).

Completed parity was based on the fertility history taken at the last wave the respondent participated in. The variable for completed parity was equal to the number of children ever born to the respondent, as long as the data were available at age 42 or older. For most respondents (64% of women and 62% of men), completed parity was collected above age 45. As a result, the "completed parity" variable missed a small number of births. According to vital registration data, women over 40 contribute only a small fraction of the Total Fertility Rate (1-2%) and the percentage would be substantially lower above age 42 (Quesnel-Vallee & Morgan 2003). Actual completed parity for men is likely to have been only slightly higher than what is reported here, based on the convergence between intended and achieved parity observed among respondents.

Independent variables:

The respondent's mother's education was used as indicator of childhood socioeconomic status. Mother's education consisted of four categories: less than high school, high school or equivalent, some college, and bachelor's degree or higher.

Two variables were used as indicators of assimilation. The first was a dummy variable coded 1 if the respondent grew up in a non-English-speaking household. The second was a dummy variable coded 1 if the respondent was an immigrant (meaning born outside the United States).

The religion the respondent was raised consisted of four categories: no religion, Protestant, Catholic, and other religion. An interaction between Catholic religion and

Hispanic ethnicity was also included, to capture potential variation in the Catholic community.

A variable for time spent married was created by using the proportion of waves in which the respondent reported being currently married.

Three sets of variables summarized adult socioeconomic status and labor force participation. First, income was captured using a dummy variable coded 1 if the respondent's household income was ever in the top third of incomes for the survey year, 0 if not[1]. Second, the analysis included a continuous variable for highest grade achieved at age 24 (or the nearest available age, ranging from 23 to 25). Finally, labor force participation was captured using a dummy variable coded 1 if the respondent ever voluntarily left the labor force (not including unemployment). Because the relationship between childbearing and adult socioeconomic status is bidirectional, the coefficients associated with these variables were considered upper bounds for the effect of socioeconomic status on the dependent fertility variables.

Finally, there were two variables capturing the timing of childbearing: whether the respondent had his or her first child by age 23 and whether the respondent had his or her first child between the ages of 24 and 30. The reference category was respondents who did not have a birth by age 30.

Descriptive statistics for these independent variables appear in Table 1. Compared with White respondents, Hispanics were less likely to have highly educated mothers, were more likely to have been foreign-born and to have grown up in a non-English-speaking household, and were more likely to have been raised Catholic. Hispanic respondents spent

a smaller proportion of survey waves married, had slightly fewer years of education, had lower incomes, and were more likely to have ever voluntarily left the labor force.

Analytic Approach

In each analysis, I compared White women to Hispanic women, and White men to Hispanic men. Sampling weights were applied to adjust for differential nonresponse, the oversampling of certain subgroups, and the use of data from multiple waves. The first part of the analysis examined group-level differences in fertility intentions and the likelihood of meeting intentions. I present average intended parity around age 22 and average completed parity at age 42 and above for the four groups. I also examined ethnic differences in the liklihood of individuals to meet intentions, that is, what proportion of White and Hispanic women and men met intentions, exceeded intentions, and fell short of intentions, and by how much. I used decomposition to examine how differences in completed parity between Whites and Hispanics were explained by three factors: differences in intended parity, differences in undershooting intentions, and differences in overshooting intentions.

In the second part of the analysis, I sought to explain why two components of completed parity – intended parity and overshooting intentions– differed by ethnicity using regression analyses. To examine why intended parity differed by ethnicity, I estimated a series of regression models in steps (non-cumulative). The steps included: 1) ethnicity only, 2) ethnicity plus mother's education, 3) ethnicity plus immigrant status and language spoken in childhood home, and 4) ethnicity plus religion raised. To examine why the likelihood of overshooting intentions differed by ethnicity, I estimated the same four models listed above, plus models adjusting for adult life course characteristics including 5)

ethnicity plus proportion of waves married, 6) ethnicity plus adult education, income, and labor force participation, and 7) ethnicity plus dummy variables for timing of first birth. In both sets of regressions, the coefficient for Hispanic ethnicity was compared across models to evaluate whether any set of factors acted as mediators. Intended parity was treated as a continuous variable and Ordinary Least Squares (OLS) regressions were used for these models[2]. Logistic regressions were used for models where the dependent variable was whether the respondent overshot parity intentions. The variable for overshooting intentions was a dummy variable coded 1 if the respondent's completed parity was higher than his or her intended parity as expressed in at age 22. Models were estimated separately for women and men. All models controlled for age at the baseline survey.

In addition, I present descriptive statistics for two factors that contribute to overshooting intentions: having an unwanted birth and revising intentions upwards.

Results

Aggregate-level and individual-level differences in intentions and births between Whites and Hispanics

Mean intended parity (around age 22) and achieved parity (at age 42 or above) are presented in Table 2. In the aggregate, Hispanic women came very close to meeting intentions: they intended 2.46 children and had 2.21, on average, meaning that they fell short by 0.25 births. In contrast, White women fell short by 0.42 births (intending 2.29 and having 1.87) on average. Men fell short by a wider margin. White men intended 2.24 births around age 22 and have had 1.71 at the last wave (a difference of half a birth). Hispanic men intended 2.50 births and had 2.10 (a difference of 0.35 births). All four

groups fell short of intentions, on average, but for both men and women, the gap between intended and completed parity was smaller for Hispanics.

Figure 1 shows how average intended parity and achieved parity evolved with age, for White and Hispanic women and men. With age, intended parity converged with achieved parity, since individuals ultimately adjusted their expectations to fit reality. Although average intended parity at the youngest ages was very similar for White and Hispanic women, White women fell further and further behind their Hispanic peers in achieved births. As a result, the White-Hispanic gaps in both achieved parity and intended parity widened with age for women. Among men, Hispanics had higher parity intentions than their White counterparts in early life, and the Hispanic-White gap in intentions continued to grow, as White men fell behind in achieved parity.

Are the ethnic differences presented in Table 1 and Figure 1 driven by differences at specific parities? The graphs in Figure 2 show the distribution in intended parity (around age 22) and completed parity (age 42 and above) for Whites and Hispanics. The top left-hand graph in Figure 2, which show women's intended parities, reveals strong similarities across the two groups, though White women were slightly more likely than their Hispanic counterparts to intend no children and slightly less likely to intend higher parities. Hispanic men were less likely than their White counterparts to intend to have two children or be childless and were more likely to intend larger families ($p<0.05$). Larger differences between groups emerged in achieved, parity, however. According to the top right-hand graph, the difference between White and Hispanic women in mean completed parity was due to differences at both high and low parities: White women were more likely to be childless and Hispanic women were more likely to have four or more children (both

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significant at p<0.05). The bottom right-hand graph demonstrates that among men, there were racial-ethnic differences in completed parity at low, middle, and high parities, with Hispanic men more likely to have higher parities and less likely to have low and middle parities.

Now turning the the question of whether individuals in these groups met their personal childbearing intentions, Table 3 paints a much different picture. In contrast to what is suggested in the aggregate results in Table 2 and Figure 1, Hispanics were not more likely to meet personal childbearing intentions. Rather, Hispanic women and men were significantly more likely to overshoot intentions, compared to their White counterparts (28% versus 21% for women; 27% versus 22% for men). Within the NLSY sample, they were also less likely to meet intentions and were less likely to undershoot intentions, though these differences were not statistically significant.

How do these factors balance out to explain why completed parity was higher for Hispanics compared with Whites? The importance of intended parity differences can be weighed against differences in overshooting intentions and undershooting intentions by applying the following decomposition formula to the data in Tables 2 and 3 ("H" stands for Hispanic and "W" stands for White):

$$\text{H-W}_{\text{mean completed fertility}} = \text{H-W}_{\text{mean intended parity}} - \text{H-W}_{\text{mean births undershot}} + \text{H-W}_{\text{mean births overshot}}$$

Women:	(2.21 − 1.87)	=	(2.46-2.29)	-	(0.70-0.72)	+	(0.46-0.29)
	0.35	=	0.17	-	-0.02	+	0.26
	100%	=	48%	+	5%	+	47%

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Men: (2.10-1.71)   =   (2.45-2.24)   -   (0.83-0.86)   +   (0.47-0.33)

         0.39   =   0.21   -   -0.03   +   0.14

         100%   =   55%   +   9%   +   36%

Differences in completed parity between Whites and Hispanics seemed to be

largely explained by differences in two factors -- intended parity and the likelihood of

overshooting intentions. 48% of the difference in completed parity between White and

Hispanic women was due to higher intentions among Hispanic women, 47% was due to the

fact that Hispanic women are more likely to overshoot intentions, and only 5% was due to

the fact that Hispanic women are less likely to undershoot intentions. Among men, a

larger fraction of the difference in completed parity between Whites and Hispanics was

due to higher intentions (55%), while 36% was due to the fact that Hispanic men were

more likely to overshoot intentions, and 9% was due to the fact that Hispanic men were

less likely to undershoot intentions. In the next section, I focus on these two important

factors – intended parity and likelihood of overshooting – and explore reasons for racial-

ethic differences in these factors.

Explaining White-Hispanic differences in intended parity

Table 4 presents coefficients from OLS regression models predicting women's and

men's intended parity. Several characteristics were significantly associated with intended

parity in early life: Higher maternal education was associated with higher intended parity

for women, while being an immigrant was significantly associated with higher intended

parity for men. Whites who were raised Catholic ("Catholic" coefficient) had higher

intentions (compared with those raised Protestant), for both women and men.

Additionally, for men, being raised with no religion (rather than Protestant) was associated

with having lower parity intentions.

The results presented in Table 4 indicate that for both women and men, Hispanics'

higher early-life intentions were related to the fact that they are more likely to be foreign-

born and more likely to have grown up in non-English-speaking homes. Controlling for

these variables in Model 3 made the Hispanic coefficient smaller and non-significant,

whereas other variables – including mother's education and religious background – did not

appear to be as useful for explaining the White-Hispanic difference in intentions.

Explaining White-Hispanic differences in overshooting intended parity

Why were Hispanic women and men more likely to overshoot intentions? There

are two possible reasons for this outcome: changing one's mind (revising intention

upwards after age 22) and having had an unwanted birth. Table 5 presents the proportion

of White and Hispanic women and men who revised their intentions upwards and the

proportion who had at least one unwanted birth. Hispanic women and men were more

likely to experience both of these conditions. 44% of Hispanic women and 51% of

Hispanic men revised their intended parity upwards between two waves at least once,

compared with 37% of White women and 42% of White men. The NLSY data provide

two methods of estimating unwanted pregnancy. According to self-reports of unwanted

births (meaning the woman reported she did not want the pregnancy at any time in the

future), nearly 10% of Hispanic women and only 5% of White women experienced an

unwanted birth by the end of their reproductive lives. These estimates are low, compared with those found in the National Survey of Family Growth (NSFG), which is considered a good source of information on unintended births. According to the 2002 NSFG, 16% of women 25-44 had experienced an unwanted birth, and this number would be expected to be higher if younger women were excluded, as they are in the NLSY data.

A second method of estimating unwanted births is to infer them, based on whether achieved parity in a given wave was higher than intended parity given by the respondent in the previous wave, 2 years earlier. Some of these births might have been intended – i.e. the respondent decided to have an additional birth, conceived a pregnancy, and had a birth, all within a 2-year span – but it is likely that many of these births were the result of unexpected pregnancies. Hispanics were more likely than Whites to be in this situation: 25% of Hispanic women and 27% of Hispanic men had an increase in achieved parity between two waves that was not predicted by intended parity at the prior wave, compared with 17% of White women and 19% of White men.

Reasons for White-Hispanic differences in overshooting intentions were further explored using regression analysis. Table 6a presents coefficients from logistic regression models predicting whether women overshot their early life intentions. Many of the variables tested in these models were significant predictors of overshooting intentions, and all were in the expected direction. Mother's education and respondent's education (highest grade completed around age 24) were negatively associated with overshooting intentions, while spending more time married was positively associated. Having ever been out of the labor force and beginning childbearing early were positively associated with overshooting.

Some of the variables tested in the models were useful for explaining White-Hispanic differences in the probability of overshooting intentions among women. As a result of controlling for immigration and language variables (Model 3), the Hispanic coefficient became non-significant (though it is still sizable in magnitude). In the model controlling for childhood religious affiliation (Model 4, which included an interaction term for Catholic * Hispanic), the coefficients for race-ethnicity were not statistically significant. This set of coefficients showed that within the NLSY sample, Hispanic Catholics had a relatively high probability of overshooting intentions (predicted probability of 0.30), compared with both White Catholics (0.19) and Hispanic Protestants (0.23). In addition, a more proximate factor – the timing of first birth – helped explain the difference between Whites and Hispanics in their probably of overshooting intentions (Model 7). The fact that Hispanic women overshot their original intentions more often than Whites was tied to the fact that they began childbearing earlier. Meanwhile, the models that controlled for mother's education (Model 2), marriage (Model 5), and adult socioeconomic status (Model 6) did not show an attenuation of the White-Hispanic difference in overshooting intentions: the Hispanic coefficient remained large and highly significant in these models. In sum, these results suggest that the higher likelihood of overshooting intentions among Hispanic women was tied to the presence of less assimilated women, the unique influence of Catholicism among this group, and an earlier schedule of childbearing.

Table 6b presents the same information for men. As with women, mother's education and respondent's own education were negatively associated with overshooting intentions. Spending more time married was associated with a greater likelihood of overshooting intentions and beginning childbearing early was significantly associated with

overshooting intentions. Catholicism was negatively associated with overshooting intentions for Whites and positively associated for Hispanics.

For men, a number of variables were useful for explaining why Hispanics were more likely to overshoot intentions. Controlling for mother's education (Model 2) made the Hispanic coefficient smaller and non-significant. Likewise, controlling for immigration and language variables (Model 3) made the Hispanic coefficient non-significant. The results from Model 4 – in which religion was controlled – showed that overshooting intentions was concentrated among Hispanic Catholics, and was less common among both other Hispanics and White Catholics. The predicted probability of overshooting intentions was 0.28 for Hispanic Catholic men, 0.17 for White Catholic men, and 0.20 for Hispanic Protestants. Ethnic differences in exposure to marriage (Model 5) did not help to explain differences in the probability of overshooting. Variables related to adult socioeconomic status – including education around age 24, income, and whether the respondent ever left the labor force (Model 6) – were also useful for explaining White-Hispanic differences in overshooting. However, interpreting these coefficients is more difficult due to endogeneity: adult socioeconomic status and labor force participation both influence and are influenced by childbearing trajectories.   Controlling for the timing of childbearing (Model 7) also attenuated the Hispanic coefficient, somewhat, suggesting that part of the reason Hispanic men were especially likely to overshoot intentions is that they began childbearing earlier.   Overall, results indicate that among Men, the fact that Hispanics were more likely to overshoot intentions, compared to their White counterparts, was related to having lower socioeconomic status, being less acculturated, affiliation with Hispanic Catholic communities, and beginning childbearing earlier.

Discussion

Hispanics have higher fertility than Whites but prior research had not explored whether this difference reflects the preferences of individuals, nor how differences in fertility levels are related to the process of exceeding or falling short of intentions over the life course. Although Hispanics came closer to achieving early-life parity intentions in the aggregate, at the individual level, they were not more likely to have the number of children they said they wanted in early life. Decomposition revealed that Hispanics had higher completed fertility than Whites mainly because their desired parity was slightly higher and they were more likely to overshoot desired parity. Overall, Hispanic-White differences in intended parity and the likelihood of overshooting intentions seemed to result mainly from the presence of less assimilated women and men in the Hispanic group, affiliation with the Catholic church, and an earlier schedule of childbearing among Hispanics.

It is clear from the analysis that differences between Whites and Hispanics are due, in part, to a subgroup of Hispanics – those who are immigrants or raised in non-English-speaking households. However, it is not clear what the mechanism is that links immigration and language characteristics to fertility measures. Cultural differences are one possibility. Alternatively (or in addition), immigration and language variables could be acting as proxies for socioeconomic status, though it is unlikely that they are better measures of socioeconomic status than the variables included in the models (which generally did not help to explain White-Hispanic differences in fertility measures). Finally, immigration status could be capturing the effect of the migration itself on fertility outcomes. The migration experience can affect fertility by separating partners from one

another, separating parents from children who remain in this home country, or changing participation in the labor market, for example. Disruption is unlikely to be a central mechanism in this case, however, because respondents were in the United States by the time they entered the survey in their late teen years.

The findings presented here are suggestive of cultural differences, which fits with other research showing that acculturation is associated with a desire for fewer children (Molina & Aguirre-Molina 1994, Ford 1990, Minnis & Padian 2001, Sorenson 1985). Prior research has also found differences in other family-related attitudes between Hispanics and other groups, particularly less acculturated Hispanics. Hispanics have been shown to be more supportive of marriage, less supportive of divorce and remaining single, and had less favorable attitudes towards childlessness (Oropesa & Gorman 2000; Trent & South 1992; Koropeckyj-Cox & Pendel 2007).

The regression results suggested that the greater likelihood of Hispanics to overshoot their original parity intentions was tied to both the strength of ties to home countries and the differential influence of religion for this group. Among both women and men, it was Hispanics who were Catholics, in particular, who tended to overshoot intentions. It could be that religious messages that encourage early and high fertility were particularly strong within the Hispanic-dominated Catholic churches in the U.S., or that affiliation with the Catholic Church among U.S. Hispanics was a proxy for acculturation, whereby closer ties with the Catholic Church signaled less acculturation (and thus stronger familistic orientations or lower socioeconomic status).

The socioeconomic variables included in the regression models were usually associated with the fertility variables in the expected directions, but generally did not

explain much or any of the difference between Whites and Hispanics in intentions or overshooting. One exception was the higher likelihood of Hispanic men to overshoot intentions, compared with White men. Here, controlling for mother's education (and adult socioeconomic status) helped to explain the White-Hispanic difference. The finding that socioeconomic status was not the most salient factor in explaining White-Hispanic differences in fertility behaviors fits with recent work by Musick et al. (2010), which found that variation in opportunity costs was not related to variation in births.

Several other variables were tested in the regression analysis predicting whether respondents overshot intentions but were not found to be useful for explaining White-Hispanic differences (results not shown). Respondents who experienced the death of a child were more likely to overshoot original intentions (suggestive of a "replacement effect") but this factor did not explain White-Hispanic differences in the likelihood of overshooting. Likewise, respondents with Rotter scores indicating a high "locus of control" were more likely to report an unwanted pregnancy, but controlling for this factor did not explain White-Hispanic differences in the likelihood of overshooting intentions.

Falling short of intentions was a surprisingly common among Hispanic women and men. This is counter-intuitive, considering the emphasis in the literature on Hispanics' higher fertility and higher rates of unintended pregnancies and births. We might assume that it is only groups with low fertility that have fewer children than they would like, but this had not been tested empirically (Bongaarts 2001; McDonald 2002). In fact, I found that Hispanic women and men were very likely to undershoot intentions – 39% of women and 43% of men fell short of intentions expressed around age 22 – and they were more likely to undershoot intentions than to either meet intentions or exceed them. Hispanic

women and men were only a slightly less likely to undershoot intentions than were Whites, and the differences were not statistically significant.

The observed patterns were similar for women and men. Of the four groups, Hispanic women came the closest to meeting intentions in the aggregate (falling short by only one-quarter of a birth, on average), but this seemed to be related to the fact that they were also the group most likely to overshoot intentions, and these women balanced out those who fell short. For both women and men, immigration and language, religion in which they were raised, and timing of first birth helped explain White-Hispanic differences in intended parity and the likelihood of overshooting intentions.

A central limitation of this study was the inability to identify country-of-origin for the three-quarters of Hispanic respondents who were born in the U.S. Prior research has established that the Hispanic category is heterogeneous, and these differences have implications for behavior. However, other studies with more complete information on national origin lack the longitudinal measures of intentions and births available in the NLSY that were necessary for this analysis.

A second limitation of this study is that it followed an older cohort of women and men – those who were 18-21 in 1979 – and the Hispanic population in the U.S. has changed in the intervening decades. Hispanics now comprise a larger fraction of the population and are more likely to be foreign born compared with the 1980s (Census 1993; Pew 2012). As a result, Hispanic women and men who are currently in their peak childbearing years might fare differently in meeting their intentions. This is an inherent drawback to analyzing fertility at the cohort level as opposed to the period level: cohort fertility levels can only be assessed once couples have finished (or nearly finished)

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childbearing, which occurs at least fifteen years after the peak childbearing years. However, the type of analysis used in this paper can only be undertaken using a cohort approach. It is reassuring that separate analyses of repeated cross-sectional data from the National Survey of Family Growth demonstrated that fertility intentions of both Whites and Hispanics have been fairly stable over time (Author's tabulations; Hagewen & Morgan 2005). According to the Current Population Survey June Supplement, completed childbearing for Hispanic women ages 40-44 in 2002 (the same birth cohort as the NLSY79) was 2.4 children, and remained fairly constant in subsequent cohorts (for example, Hispanic women who were 40-44 in 2008 had 2.2 children) (Parrado 2011). Despite the drawbacks of examining fertility from a cohort perspective, cohort measures (those that rely on "children ever born") are likely more reliable for estimating Hispanic fertility compared with period measures (those that rely on vital statistics and census counts), for various reasons, including the fact that Hispanics may be undercounted in population estimates (Parrado 2011; Preston & Hartnett 2010)

Future research might focus on identifying turning points in the life course that set individuals on a path towards overshooting or undershooting their fertility intentions. Adopting a life course approach will be particularly important for understanding the evolution of intentions and births among the high proportion of immigrants who arrive in the U.S. in the middle of their childbearing years. Future research should also take care to monitor changes in sending countries. The fertility levels in Latin American countries continue to converge with that of the U.S., so while the cultural assimilation of immigrants may have been important for understanding fertility patterns among past and current

generations of immigrants, the salience of this factor is likely to decline among future

cohorts.

Table 1. Women's and Men's Characteristics: Descriptive Statistics (Weighted)

|	Women			Men	
	White	Hispanic		White	Hispanic
Mother's Education					
Less than High School (%)	11.5	51.3 *		10.8	49.0 *
High school or equivalent (%)	15.2	13.9		12.2	9.6
Some college (%)	49.2	24.3 *		53.2	26.9 *
Bachelor's degree or higher (%)	24.1	10.6 *		23.9	14.5 *
Foreign born (%)	2.2	19.7 *		1.9	24.9 *
No English in childhood home (%)	7.8	75.6 *		9.3	77.0 *
Religion raised					
No religion (%)	3.6	2.6		4.4	2.3 *
Protestant (%)	51.8	17.6 *		49.6	15.0 *
Catholic (%)	32.3	72.3 *		33.9	75.4 *
Other religion (%)	12.3	7.5 *		12.2	7.3 *
Percentage of waves married (mean)	61.4	56.0 *		55.1	50.4 *
Highest grade completed at age 24 (mean)	13.1	12.1 *		13.1	12.2 *
Ever had income in highest third of respondents (%)	76.6	61.0 *		76.3	63.4 *
Ever left the labor force (homemaker) (%)	53.1	60.8 *		18.6	30.3 *
Timing of childbearing					
Had first child by 23	34.6	53.9 *		20.3	33.9 *
Had first child ages 24-27	32.0	23.5 *		34.7	29.6 *
No first child by 30	33.4	22.6 *		45.0	36.5 *
N =5,248	*1,923*	*767*		*1,849*	*709*
*White-Hispanic differences significant at p<0.05					

Table 2. Mean intended and achieved parity, by race-ethnicity and gender, NLSY79 (Weighted)

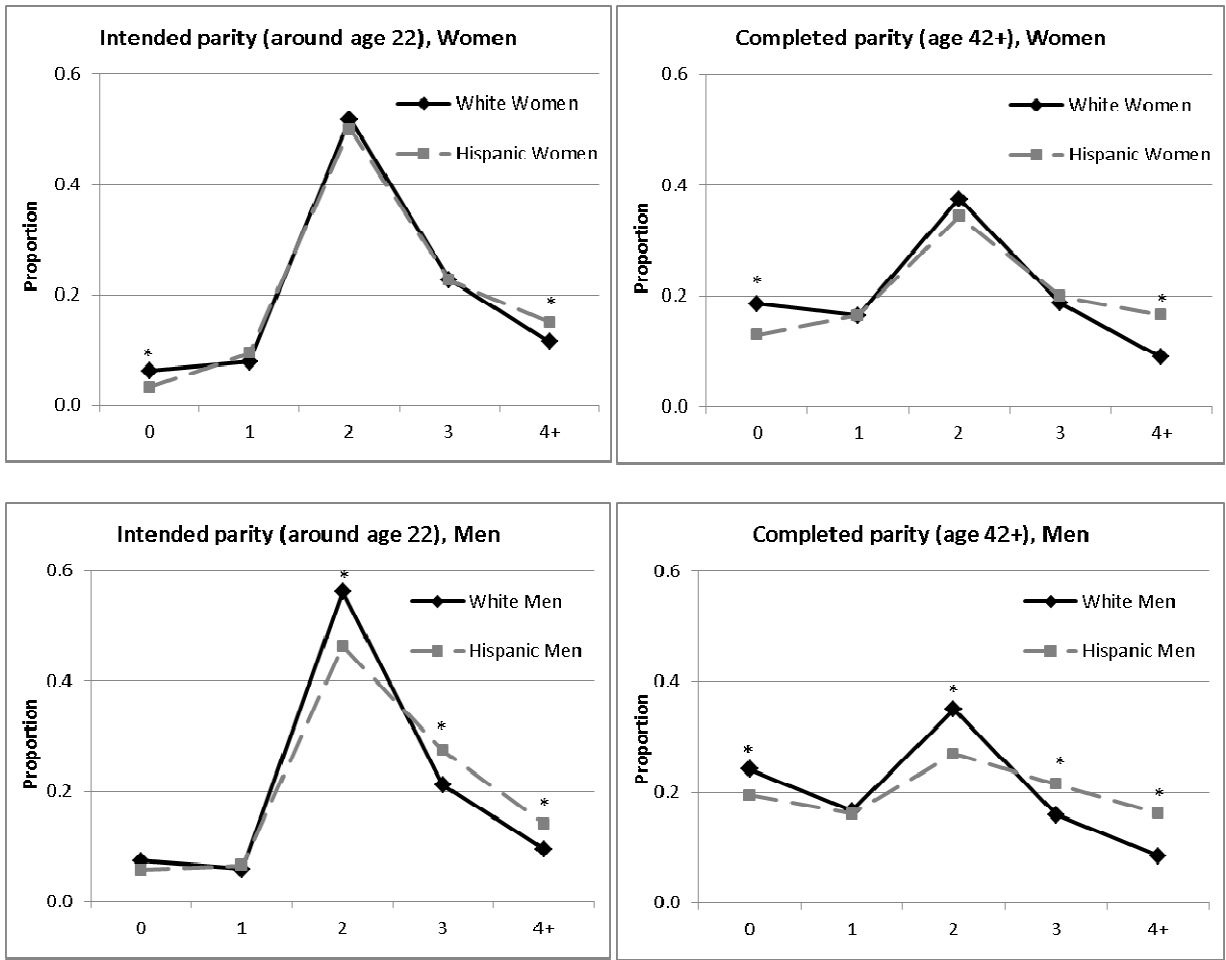|	Women			Men		
	White	Hispanic		White	Hispanic	
Intended parity around age 22 (mean)	2.29	2.46	*	2.24	2.45	*
Last recorded achieved parity (age 43+) (mean)	1.87	2.21	*	1.71	2.10	*
Difference (achieved - intended)	-0.42	-0.25		-0.53	-0.35	
N =5,248	*1,923*	*767*		*1,849*	*709*	
* White-Hispanic difference significant at p<0.05						

Figure 1. Intended and achieved parity by age, race-ethnicity, and gender, NLSY79
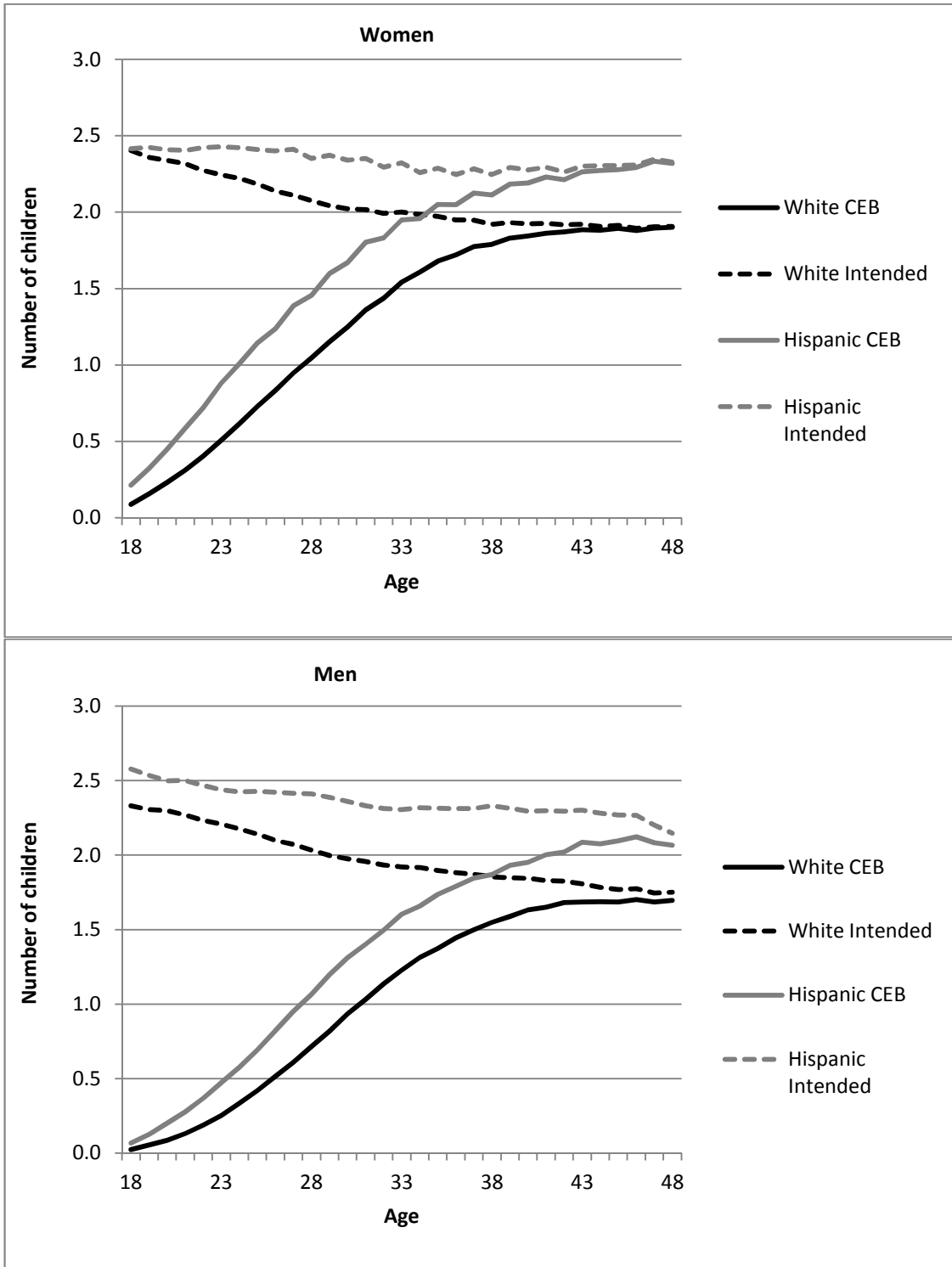
Note: Data points are 5-year moving averages. "CEB" = Children Ever Born. "Intended" = Intended Parity

Figure 2. Intended parity (around age 22) and completed parity (age 42 and above), for White and Hispanic women and men, NLSY79

*Difference between Whites and Hispanics statistically significant at p<0.05

Table 3. Proportion of individuals who met early life parity intentions, by race-ethnicity and gender, NLSY79 (Weighted)

	Women			Men	
	White	Hispanic		White	Hispanic
Undershot intentions (%)	41.9	38.6		46.7	42.8
Achieved intentions (%)	37.5	33.6		31.8	30.8
Overshot intentions (%)	20.6	27.8 *		21.6	26.5 *
	100.0	100.0		100.0	100.0
Average number of births by which respondents undershot[1]	0.72	0.70		0.86	0.83
Average number of births by which respondents overshot[1]	0.29	0.46		0.33	0.47
N =5,248	*1,923*	*767*		*1,849*	*709*
*White-Hispanic differences significant at p<0.05					
[1]Respondents who did not undershoot (or overshoot) are given values of zero					

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Table 4. Coefficients from OLS regressions predicting intended parity, by gender, NLSY79

	Women (N=2,690)								Men (N=2,558)							
	Model 1		Model 2		Model 3		Model 4		Model 1		Model 2		Model 3		Model 4	
	Baseline		Mother's education		Immig & language		Religion raised		Baseline		Mother's education		Immig & language		Religion raised	
Hispanic (Ref = NH White)	0.167	**	0.166	**	0.103		0.164		0.212	**	0.223	**	0.092		0.170	^
Mother's education (Ref = High school)																
Less than high school			0.170	*							0.060					
Some college			0.121	^							0.100					
Bachelor's or higher			0.269	**							0.087					
Born outside the U.S.					0.006								0.212	*		
Grew up in non-English-speaking household					0.093								0.105			
Religion raised (Ref = Protestant)																
No religion							-0.064								-0.326	**
Catholic							0.306	**							0.173	**
Catholic * Hispanic							-0.149								-0.047	
Other religion							0.248	**							0.032	
^ p<0.10, * p<0.05, ** p<0.01																
Notes: All models control for age at the baseline (1979) survey. Standard errors in brackets.																

Table 5. Reasons for overshooting intentions, NLSY79 (women and men who were 15-21 in 1979) (Weighted)

	Women			Men	
	White	Hispanic		White	Hispanic
Indicator of changing one's mind:					
% who ever revised intentions upward between two waves	37.2	43.7 *		42.1	50.5 *
Indicators of unwanted births:					
% classifying at least one birth as unwanted (reported retrospectively)	4.5	9.5 *		N/A	N/A
% whose achieved parity in any of the survey years is higher than his/her intended parity at the previous survey (2 years earlier)	17.4	25.2 *		18.5	26.9 *
N =5,248	1,923	767		1,849	709
Note: Bolded numbers indicate White-Hispanic differences significant at p<0.05					

Table 6a. Coefficients from logistic regressions predicting overshooting intended parity, among women, NLSY79

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Baseline		Mother's education		Immig & language		Religion raised		Marriage		Educ. & income		Timing	
Hispanic (Ref = NH White)	0.393	**	0.318	*	0.267		0.084		0.444	**	0.269	*	0.196	^
Mother's education (Ref = High school)														
Less than high school			-0.376	*										
Some college			-0.474	**										
Bachelor's or higher			-0.857	**										
Born outside the U.S.					0.404	^								
Grew up in non-English-speaking household					0.074									
Religion raised (Ref = Protestant)														
No religion							0.053							
Catholic							-0.116							
Catholic * Hispanic							0.483							
Other religion							-0.034							
Proportion of survey waves spent married									0.918	**				
Highest grade completed (at age 24)											-0.088	**		
Income in the top third of respondents at any wave											0.129			
Ever left labor force (e.g. homemaker)											0.784	**		
Timing of first birth (Ref = after 30)														
First birth before age 23													1.817	**
First birth between 23 and 30													1.271	**
N = 2,690														
^ p<0.10, * p<0.05, ** p<0.01														
Notes: All models control for age at the baseline (1979) survey.														

Table 6b. Coefficients from logistic regressions predicting overshooting intended parity, among men, NLSY79

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Baseline		Mother's education		Immig & language		Religion raised		Marriage		Educ. & income		Timing	
Hispanic (Ref = NH White)	0.268	*	0.171		0.358	^	-0.208		0.337	**	0.150		0.099	
Mother's education (Ref = High school)														
Less than high school			-0.359	^										
Some college			-0.699	**										
Bachelor's or higher			-0.581	**										
Born outside the U.S.					-0.054									
Grew up in non-English-speaking household					-0.116									
Religion raised (Ref = Protestant)														
No religion							0.448	^						
Catholic							-0.397	**						
Catholic * Hispanic							0.861	*						
Other religion							-0.089							
Proportion of survey waves spent married									1.472	**				
Highest grade completed (at age 24)											-0.120	**		
Income in the top third of respondents at any wave											-0.054			
Ever left labor force (e.g. homemaker)											-0.044			
Timing of first birth (Ref = after 30)														
First birth before age 23													1.987	**
First birth between 23 and 30													1.549	**
N = 2,558														

^ p<0.10, * p<0.05, ** p<0.01

Notes: All models control for age at the baseline (1979) survey.

Appendix A: Comparison of analytic sample with full (original) sample, by race-ethnicity and gender, NLSY79 (Unweighted)

	Female				Male			
	White		Hispanic		White		Hispanic	
	Full sample	Analytic sample	Full sample	Analytic sample	Full sample	Analytic sample	Full sample	Analytic sample
Intended parity around age 22 (mean)	2.25	2.28	2.47	2.47	2.21	2.24	2.47	2.48
Mother's Education								
Less than High School (%)	16.2	12.8	59.0	60.1	15.6	12.6	58.2	59.0
High school or equivalent (%)	16.1	15.9	12.7	12.1	13.7	12.4	10.9	10.3
Some college (%)	47.6	48.7	20.7	20.2	50.1	52.4	21.1	21.4
Bachelor's degree or higher (%)	20.0	22.6	7.6	7.6	20.7	22.6	9.9	9.3
Foreign born (%)	2.7	2.2	23.7	22.7	2.5	1.8	27.6	25.8
Grew up in non-English-speaking HH (%)	9.7	8.0	87.2	87.9	10.2	9.5	88.1	87.2
Religion raised (Ref = Protestant)								
No religion (%)	4.1	4.0	1.2	1.2	5.1	4.7	2.7	2.1
Protestant (%)	52.0	52.4	8.8	9.3	51.6	49.9	7.6	8.2
Catholic (%)	30.9	31.5	84.5	84.0	30.5	33.3	84.1	84.1
Other religion (%)	13.0	12.2	5.5	5.6	12.8	12.1	5.6	5.6
N	*3,424-3,567*	*1,923*	*994-1,064*	*767*	*3,489-3,672*	*1849*	*930-1,029*	*709*

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[1] A second specification of income – average rank across survey waves – was also tested, but results did not differ.

[2] Poisson regressions were also performed, but results did not differ, so only OLS results are presented here.