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Racial differences in Transitions to Marriage for Unmarried Mothers

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Abstract

Unlike prior studies that have explained racial differences in the transitions to marriage among unmarried women, our study used the Fragile Families and Child Wellbeing Study to examine racial differences in the transitions to marriage among unmarried women following a non-marital birth. We found that Black mothers were 60–65% more likely to delay marriage after a non-marital birth compared to White mothers and these racial gaps were only partially explained by economic, demographic and attitudinal factors. Our paper further contributes to this literature by examining changes in cohabitation patterns, educational attainment, poverty status and attitudes of gender distrust that are able to partially explain and reduce these racial gaps in transitions to marriage. With the general decline in marriage and rise in cohabitation, our paper tried to assess whether cohabitation is a leading factor for marriage or a substitute for marriage for unmarried mothers. Racial disparities have important implications for child wellbeing and intergenerational transmission of inequalities.

Keywords

Fragile Families; Marriage; Race; Cohabitation; Education; Hazard models; Attitudes towards marriage

Introduction

In recent decades, there has been a steady decline in marriage rates, steep rise in divorce and non-marital childbearing in the US that have motivated discussions around the *retreat from marriage*, eliciting concerns about the welfare of children in single parent households and intergenerational transmission of poverty and inequality (Bianchi 1999; Lundberg et al. 2016; McLanahan 1985; McLanahan and Casper 1995; Spain and Bianchi 1996). The proportion of nonmarital births rose dramatically from 5% in 1960 to 20% in 1983 to around 40% in 2014. At the same time, cohabitation has been rising substantially since 1970 and the

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Compliance with Ethical Standards

Ethical approval: This article does not contain any studies with human participants performed by any of the authors.

majority of nonmarital births have occurred to cohabiting couples causing a dramatic shift in family structure and family complexity.¹

These trends have been accompanied by a striking divergence between racial groups. In 2014, 70% of all births to Black women, 53% to Hispanic women occurred outside of marriage, compared with 36% for White women. Among Hispanics and White mothers, 68% of all nonmarital births occurred to cohabiters, compared with only 35% for Black mothers (Child Trends Databank 2015). Demographers, sociologists and economists have thus been interested in studying trends that are associated with the increase in a new type of family formation known as the *fragile family* in which unmarried parents raise their children together (Carlson et al. 2004b).

The already well known racial divergence in marriage rates among unmarried parents have mostly been attributed to marriage market conditions associated with a lack of African-American men and a surplus of Hispanic men relative to women in addition to fathers' economic capacities, parents' attitudes towards marriage, and parents' relationship quality (Harknett and McLanahan 2004). Although Whites have higher marriage rates than Hispanics and Blacks after a nonmarital birth, studies have ignored the role of cohabitation in explaining these racial differences. If Black mothers are less likely to cohabit and less likely to transition to marriage relative to White or Hispanic mothers, examining cohabitation patterns across time may have the potential to explain the lower marriage rates and the lower likelihood of marriage among Black mothers.

Further, the retreat from marriage and rise in nonmarital childbearing are also highly stratified by economic status and education since those occurred most dramatically amongst low-income and less educated individuals. While only 5% of nonmarital births in 1980 were to college graduates compared to 24% for high school graduates, this statistic had dramatically risen to 11% for college graduates compared to 58% for high school graduates by 2013 (Brown et al. 2015, Lundberg et al. 2016).

Our study contributes to this ongoing research on the racial differences in the likelihood of (and time to) marriage for unmarried mothers to their child's father. Using the most recent data from the Fragile Families and ChildWellbeing study (FFCWS henceforth), we examined the probability of marrying a child's father by the ninth year (108 months) after a nonmarital birth. To determine the factors that govern the transitions to marriage, we first examined factors associated with the likelihood of marriage such as race, education, economic status, and child's characteristics. Second, we investigated cohabitation patterns that may have the potential of explaining the racial gap in marriage among unmarried mothers. Third, we illustrated how other factors such as attitudes towards marriage, gender distrust, family structure and complexity, religiosity, and parents' health status influence the marriage process.

Prior research has examined racial differences in the status of parents' relationship 15 to 30 months after a nonmarital birth using the same data (Harknett and McLanahan 2004). They

¹Over 40% nonmarital births occurred to cohabiting mothers in 2002 and this increased to 58% between 2006–2010.

found that Black mothers were 2.5 times less likely to marry compared to White and Hispanic mothers, mainly due to the under supply of marriageable men. They found that relationship and attitudinal variables were not as important in explaining racial differences as much as economic conditions were. We added to this research by looking at relationship transitions over a longer term to examine if the persistent racial differences change over a longer period of time.

Our analysis can be contrasted to previous studies on marriage among single mothers (Furstenberg Jr et al. 1987; Graefe and Lichter 2002) since we only considered transition to marriage to the biological father of the child. The importance of marriage among the child's biological parents has been associated with positive benefits for children and lower family instability, which motivated us to focus on marriage between biological parents (Brown 2010; Cavanagh and Huston 2006; Fomby and Cherlin 2007; McLanahan and Sandefur 1996; Osborne and McLanahan 2007).

The rise of cohabitation as an alternative to marriage has been characteristic of the post-World War II transition of the American family (Lundberg et al. 2016). However, cohabitation has also served as a transient stage before marriage for some families (Manning and Smock 1995). While cohabitation could be the new form of family, there may be significant racial variation in transiting from cohabitation into marriage and these patterns may be influenced further by the birth of a child. No research to date has evaluated cohabitation patterns over time as a possible explanation for the racial gap in the transition to marriage for unmarried parents, and attempting this is our main contribution to this literature.

While Harknett and McLanahan (2004) did not find quantitative evidence on attitudinal variables such as gender distrust in explaining the racial differences in transitions to marriage, Gibson-Davis et al. (2005) presented qualitative evidence that attitudes towards and expectations from marriage have a significant role to play in the transition to marriage. We reconciled the qualitative and quantitative evidence in our paper by examining the interactions between race and attitudinal variables such as gender distrust and financial security.

Our main finding indicated that there were pronounced racial differences in the transition to marriage among unmarried mothers to the biological father, even nine years after a nonmarital birth. Black mothers were 60–65% less likely to transition into marriage relative to White and Hispanic mothers. We also found that fathers with a college or graduate education were likely to marry sooner relative to their less educated counterparts. In contrast, we found that there were no significant differences by educational attainment in the transition to marriage for mothers. Racial differences persisted even after accounting for educational attainment. More significantly, we also found that the racial gap was partly explained and reduced by (1) controlling for past cohabitation patterns of unmarried parents and (2) accounting for interaction effects of race with attitudes of gender distrust and levels of poverty.

A review of the relevant literature has been presented in the Background section, followed by the Data and Methodolgy section. We described our model estimations in the Results section. Finally, we provided a context to the findings of our study in the Discussion and Conclusions section.

Background

American family arrangements have undergone a substantial change in the past 60 years. Family arrangements have become more complex, age at first marriage has risen, premarital cohabitation and childbearing has become common among men and women at all levels of education. There is a vast literature that discusses the changing landscape of marriage in the US. In this section, we discuss some of the key studies that provide a relevant background for our paper.

Economic Theories and Empirical Studies on Marriage and Cohabitation

The seminal work by Becker (1973, 1981) was paramount in developing the economic theory of marriage. According to Becker's economic model, the individuals' decision to marry depends on the expected utility from marriage relative to the expected utility from remaining single. Further, the benefits from marriage that potential partners can accrue are greater when there is more specialization and a higher wage gap between them. The marriage contract could then be perceived as a contract where the man engaged in market based work (high earnings) and the woman engaged in household production (low earnings). While this family model prototype was representative of the post-World War II era, it offered little insight into why individuals marry instead of cohabit. Thus, these models did not account for cohabitation as a widely acceptable substitute for marriage or remaining single in the late 1970s (Lundberg et al. 2016). With the substantial increase in labor force participation rates of women and declining gender wage-gaps, specialization of market work and household production decreased dramatically in the past 60 years which has been associated with an increase in the opportunity cost of rearing children and likelihood of divorce (Lundberg and Pollak 2007).

Recent studies on the economics of cohabitation have suggested that the gains from specialization in economic models of marriage could potentially be realized in cohabiting unions as well². While there are several benefits of marriage, married individuals receive some extra utility derived from following the social custom, marriage acts as a commitment device that facilitates cooperation and/or encourages partners to make relationship-specific investments, and finally, the marriage contract serves as a credible signaling device for true love, and the costs of exiting a marriage (divorce) are much greater than the costs of exiting cohabitation (Matouschek and Rasul 2008). A significant cause of cohabitation is the need to learn about potential partners and to hedge against future bad shocks (Brien et al. 2006).³ In addition, for modern and less specialized couples, the gains from production complementarities between market and household work have been declining and many of

²Here, cohabitation refers to couples living together. It should be noted that not all cohabiting unions are the same and the extent to which couples live together may vary across households, which is extremely difficult to discern from surveys

³They also show that using policy experiments that changing the cost of divorce have little effect on relationship choices.

the gains from marriage or cohabitation are possibly realized due to shared consumption of household public goods and leisure (Stevenson and Wolfers 2007). Cohen (2002) has emphasized the growing population of cohabitators in the study of the marriage premium for men. The study found that the downward trend in the marriage premium is not as steep after controlling for cohabitation.

Empirical research has shown that men's earnings have a positive effect on marriage post nonmarital conception or birth (Testa et al. 1989; Zavodny 1999). However, there is no consensus on the relationship between women's earnings and the likelihood of marriage post a nonmarital birth. This is because women's earnings leads to a tradeoff between the positive income effect on marriage and the decrease in gains from specialization in the family. These mixed results for women's earnings may also be because the motivation for marriage itself has been waning over time (Carlson et al. 2004b). The factors that have led to a rise in nonmarital childbearing for mothers with a high-school education or less have been attributed to the lack of marriageable men, poor economic opportunities, and high welfare benefits. For college educated women, factors like holding more independent views about marriage and becoming a mother at an older age are significant (Usdansky and McLanahan 2003).

Nonmarital childbearing is highly stratified by education. Lundberg and Rose (2003) found that women's education has no effect on the likelihood of the woman marrying the child's father. However, educated mothers are more likely to marry sooner, but not necessarily to their child's father post a nonmarital birth. However, college graduates seemed to have retained more traditional behaviors than have men and women with less education (Goldstein and Kenney 2001; Lundberg et al. 2016). Furtado and Theodoropoulos (2011) found that education does not appear to influence marriage decisions for Asians or Hispanics as much it does for Whites. Educated men are more likely to marry childless women whereas men with less marriageable qualities (less education and less economic resources) are more likely to marry unwed mothers (Lichter and Graefe 2007). While women's education is positively correlated with husband's earnings, higher levels of women's education have a very small effect on the probability of marriage (Lefgren and McIntyre 2006). Only a few researchers have examined the effect of unmarried parents' education on transitions to marriage. Harknett and Kuperberg (2011) focused on labor market conditions as an important factor in explaining the positive relationship between educational attainment and marriage for unmarried parents. They found that if less educated parents had similar experiences in the labor market as their more educated counterparts, then the disparities in marriage by educational attainment would reduce substantially. Better labor market conditions influence marriage positively for fathers at all educational levels. This is because mothers are looking to get married to fathers as long as the fathers can provide financial stability. Thus, better labor market conditions are positively related to marriage for less-educated mothers but not to their more-educated counterparts. McKeever and Wolfinger (2011) examined how economic circumstances of never-married mothers and their families may have changed over 1982–2002. They found that never-married mothers remain poor on average despite impressive gains in education. Besides, the modest economic gains have disproportionately occurred only at the top of the income distribution and these gains may cast doubt on various stereotypes about women who give birth out of wedlock.

Race and Marriage

Studies have shown that there are racial differences in transitions to marriage. Blacks have lower marriage rates than whites and much of this gap can be explained by economic factors (Edin 2000; Lichter et al. 1991; Raley et al. 2015). Marriage market conditions that are associated with a shortage of marriageable men also provide important explanations for low marriage rates among African-Americans. The underlying factors for adverse marriage markets for African-Americans are attributed to imbalanced sex ratios at birth in addition to excess mortality, high rates of incarceration among young African-American men and high rates of unemployment and underemployment among African-American men who can be considered marriageable (Harknett and McLanahan 2004).

While Black women are less likely to marry due to a *marriage squeeze* compared to White women, Bulcroft and Bulcroft (1993) found that Black women also find marriage more exploitative and less beneficial because of more traditional views of marriage among Black men. Black women have experienced lower levels of marital happiness, marital interaction and are more likely to divorce compared to Whites or Hispanics (Bulanda and Brown 2007).⁴ While low skills, a lack of labor market opportunities, labor market discrimination, and criminal records can explain the retreat from marriage among disadvantaged populations, these factors are not enough to account for the falling marriage rates among the educated, thus attitudinal factors that redefine gender roles must be considered (Edin and Nelson 2013; Lundberg et al. 2016). Raley et al. (2015) emphasized that the racial gap in marriage that emerged in the 1960s, and has grown since, is due partly to broad changes in ideas about family arrangements that have made marriage optional and social class has become increasingly important for marriage.

Attitudes, Religiosity, and Marriage

Previous studies have documented attitudinal factors as being integral for men and women's transitions to marriage. Various scales have been used for measuring positive or negative attitudes towards marriage (Park and Rosén 2013). Manning et al. (2012) explored linkages between experiences of parental cohabitation during childhood, young adults' union formation expectations, and subsequent cohabitation or marriage. They found that parental cohabitation is not associated with expectations to marry for adults. Brown (2010) found that cohabiter's own expectations and relationship assessments significantly affected union transitions.

Attitudes towards marriage could also be proxied by religiosity or religious affiliation that can affect the decision to marry (Rosenfeld 2008). Participation in formal religion affected men's investments in relationships and improved quality of marital relationships, especially for fathers in FFCWS (Wilcox and Wolfinger 2008, 2007). In fact, using the same data they found that attending religious services frequently increased the likelihood of marriage for new parents since individuals who are more religious have traditional gender-role attitudes. Paat and Hope (2015) examined some questions asked of the couples in FFCWS to represent cultural values, marital aspirations, and attitudes. Ironically, those who believed in parental

⁴Studies have also explored whether racial differences in adolescent experiences have lasting effects into adulthood (Crissey 2005).

independence (i.e. a single mother can bring up a child as well as a married couple) were more likely to be married suggesting that Americans put their family before self-interests or individualism. Those who believed that children are better off with both parents were more likely to transition into marriage.

Osborne (2005) found that gender distrust is likely to delay marriage. Qualitative studies have also cited gender distrust in sexual infidelity, authority and exploitation as factors that discourage marriage (Edin et al. 2003; Gibson-Davis et al. 2005). Waller and McLanahan (2005) found that unmarried men's optimism and expectations in addition to pro-marriage attitudes of both the unmarried partners generally led to marriage.

Other Factors

While economic capacities via earnings, educational attainment and attitudes are significant determinants of marriage, previous literature has also documented parental health, child's health and gender, family structure and complexity and welfare benefits as being important to transitions to marriage. Fu and Goldman (1996) found that individuals with unhealthy behaviors and physical characteristics are less likely to get married. However, Lillard and Panis (1996) have shown that while healthier people are more likely to get married, marriage may also have a protective effect, which means unhealthy men have an incentive to get married. The relative strength of protective effects of marriage as well as positive selection can make the correlation between health and likelihood of marriage an empirical question. While health informs marriage decisions, marriage itself may change health-related decisions over the life course that can influence re-marriage, cohabitation and divorce decisions.⁵ Osborne (2004) analyzed the relationship between maternal stress and parents' relationships at birth (stably married, cohabiting, visiting, and single-mother families) utilizing the FFCWS dataset. They found that single mothers report higher levels of maternal stress. Teitler et al. (2007) used data from FFCWS and found that mothers with mental health issues were two-thirds as likely to marry than those who did not have any mental health problems.

Lundberg and Rose (2003) have shown that the birth of a son speeds transition into marriage and found this effect to be stronger for marriages to the child's biological father relative to other marriages, suggesting that the gender of the child may impact the value of marriage relative to single parenthood. Child health may also affect union transitions post a nonmarital birth. If unmarried parents have a child whose health is very poor, they may face adverse financial and emotional burdens and this may reduce their capacity to invest in their child's health. Reichman et al. (2004) used the FFCWS data and found that having a child with poor health decreased the probability that the parents lived together after a year of a nonmarital birth.

With divorce and nonmarital childbearing, multipartnered fertility has increased and this may affect union formations for unmarried parents (Carlson and Furstenberg 2006). In the FFCWS data, the majority of mothers are not first time mothers and many mothers with two or more children have had at least one child with someone other than the biological father of

⁵These decisions also have a wide variation by race and ethnicity (Weden and Kimbro 2007).

their newborn. Fathers are equally likely to exhibit multiple partner fertility. Multiple partner fertility reduces the probability of marriage for mothers and fathers, occurs mostly among older women and is also high among African American mothers and fathers, which may be associated with their low marriage rates (Mincy 2002). Dunifon and Kowaleski-Jones (2002) discussed the impact of family structure on children's development by distinguishing between living with a single parent, living with a mother and her cohabiting partner, and living with a married parent. The study also examined race differences in the associations between family structure and children's well-being and finds that single parenthood was found to be associated with reduced wellbeing among European American children, but not African American children. Cohabitation was associated with greater delinquency among African American children, and lower math scores among European American children.

Many studies have discussed the role of welfare benefits on marriage. Social policies such as healthy marriage promotion programs for older women, child support enforcement programs, and Temporary Assistance for Needy Families (TANF) block grant programs (or state welfare programs) are designed to encourage marriage for couples who have nonmarital births and may face financial hardship (Solomon-Fears 2011). While higher state welfare benefits have been found to discourage couples from dissolving relationships, strong child support enforcement programs have been found to decrease the likelihood of marriage for unmarried parents (Carlson et al. 2004a).

Thus, despite a large body of literature, economic and demographic explanations cannot fully account for the racial gap in marriage rates and marriage expectations. To this end, we explored the effects of various kinds of attitudes and perceptions about marriage to examine whether the racial differences can be explained by factors that are beyond economic or demographic.

Data and Methodology

We utilized data from the Fragile Families and Child Wellbeing study (FFCWS), which follows a birth cohort of approximately 5000 children born to unmarried parents in 20 large US cities. The weighted sample (using city-level weights) is representative of all non-marital births to parents residing in cities with populations over 200,000.⁶ These data were used to examine transitions to marriage for mothers and fathers after a non-marital birth. The baseline wave of data collection took place from 1998 to 2000. We used data from the mothers' and fathers' baseline surveys, and follow-up surveys at one, three, five, and nine years post a nonmarital birth, thus adding more recent findings to this ever expanding literature.

Variables of Interest

We modeled the hazard of marriage of mothers to the father of the child using duration models. For the analysis of transitions to marriage post a nonmarital birth, the dependent variable was the duration from the time of the birth until the exact month of marriage and is measured in person months. In order to maximize our sample, we included all respondents

⁶For more details about the FFCWS sample and design see Reichman et al. (2001).

who may have skipped a survey wave but did participate in the future survey waves. In case of missing data on marriage months, we calculated marriage month to be the midway point between the last interview in which the respondent indicated being unmarried and the first interview in which the respondent indicated being married.

Our independent variables were of three types: individual, familial, and economic. All summary statistics are provided in Tables 1 and 2 and discussed in detail in the Results section. The *individual characteristics* of parents included educational attainment, health status, attitudes towards marriage, religious service attendance, race and age. Except for race and attitudinal variables which were time-constant, all individual characteristics were time-varying. Mother's and father's education was divided into three groups: high school/GED or less; some college or tech degree; college degree or higher. Mothers and fathers educational attainment were measured in each survey wave. Health status was captured by three variables: mother's and father's health (on a scale of 1–5 where 1 is excellent and 5 is poor) and dichotomous indicators of depression and self-reported drug or alcohol problems. Attitudes towards marriage contained a list of variables that are described in Table 2. Attitudes towards religion were captured by religious service attendance (on a scale of 1–6 where 1 is few times a week or more and 6 is never attending the religious institution). Race was categorized as White, non-Hispanic; Black, non-Hispanic; Hispanic; other.⁷

The *familial characteristics* included the gender of the child, sex ratio at birth and child's health (on a scale of 1–5 where 1 is excellent and 5 is poor). We also controlled for family structure and complexity by including the number of children by mother and father below the age of 18 in the household; a dichotomous indicator of whether the mother has children only by the baby's father; a dichotomous indicator of cohabitation with baby's father; and dichotomous indicators unmarried parents' cohabitation patterns with a new partner.⁸ Except the gender of the child and sex ratios at birth, all variables capturing familial characteristics were time-varying.

The *economic characteristics* included time-varying variables: an indicator of employment status and an income to poverty ratio for the mother and father. Employment measures were based on questions that asked whether mothers and fathers were employed in the week prior to the survey with the exception of the employment measured at baseline that asked whether the respondents were employed a year prior to the birth of their child. The income-to-poverty ratios measure the ratio of household income to the official US poverty thresholds defined by year and family composition.

In addition to capturing the marriage market, city *fixed effects* were included in all our models to control for time-invariant characteristics of cities such as variations in attitudes towards marriage and nonmarital childbearing that may influence education and marriage. Table 1 presents a description of the variables in our sample.

⁷The 'other' race category refers to everyone who is not White, non-Hispanic; Black, non-Hispanic; Hispanic. This group is constitutes less than 5% of the sample and the racial make-up of this group is not known in FFCWS.

⁸According to Harknett and McLanahan (2004), cohabitation might be an important indicator of strong marriage markets.

Hazard Models

We employed the Cox Proportional Hazards model to predict time to marriage (Cox 1972, 1975). We estimated the following model

$$\ln(hr) = \beta_1 Indiv_t + \beta_2 Famil_t + \beta_3 Economic_t + \beta_4 Interactions_t + \gamma Fixed \quad (1)$$

where $\ln(hr)$ is the log of the ratio of the hazard rate of marriage at time t to the baseline hazard rate at time 0; $Indiv_t$ is a vector of individual characteristics; $Famil_t$ is a vector of familial characteristics; $Economic_t$ is a vector of economic characteristics; $Interactions_t$ is a vector of interaction terms between covariates; and $Fixed$ represents city fixed effects. We used city-level weights for each estimation. For some models we used interaction terms. In general, an interaction term between two variables accounts for the partial effect of an independent variable on the dependent variable, conditional on the level of another independent variable.⁹

The advantage of modeling the hazard rate of marriage is that it allowed us to examine, both the likelihood of marriage and the duration until marriage. We estimated a variety of models described as follows

1. In Table 3, estimation results from 5 models are shown. (1) Base model with all aforementioned variables excluding attitudes (2) Base model with interaction terms for mothers' race and education (3) Base model with interaction terms for mothers' race and poverty (4) Base model including past or lagged cohabitation to the child's father (with interaction terms for parents' race) (5) Base model including past cohabitation to a new partner.
2. In Table 4, estimation results from 3 models are shown. (1) Model with collapsed education categories, less than high school educated versus others. (2) Model adding interaction terms for parents' race and education (3) Model with collapsed race categories, Blacks vs non-Blacks.
3. In Table 5, estimation results from 10 models are shown. These correspond to adding each of the 10 attitudes variables as controls in Table 2 to the base model.
4. In Table 6, estimation results from 4 models are shown. (1) Model with interaction terms for gender distrust scale and mothers' race (2) Model with interaction terms for gender distrust scale and fathers' race (3) Model with interaction terms for financial security and mothers' race (4) Model with interaction terms for financial security and fathers' race.

⁹For example, if we allow for interaction terms between race and education, then we can account for partial effects of race on time to marriage, conditional on the level of education.

Results

A description of the variables used in our analysis is shown in Table 1. The table only reports the characteristics of covariates at baseline or one year follow up surveys but we also described how these covariates changed by the ninth year follow up. On average 10% mothers were married to their child's father by the first year follow up, 14% by the ninth year, although this statistic is reported after attrition of survey respondents. Roughly 57% of the mothers in the sample were Black and non Hispanic, 26% were Hispanic and 15% were White and non Hispanic. Most couples were in their early to mid-twenties at the time of the birth. Roughly 75% of fathers and mothers had an education of high school or less which again suggests how nonmarital childbearing is stratified by education. Only 3% of mothers and fathers had at least a college education whereas by the ninth year follow-up surveys (results not shown), 8% of mothers and 7.6% fathers received a college or graduate education. While mothers' income-to-poverty ratios were worse than fathers in the baseline survey, mothers' poverty indicators worsened nine years after a nonmarital birth whereas for fathers they improved. Variables describing family structure and complexity suggest that on average, both unmarried parents had a child before the nonmarital birth. There was presence of multipartnered fertility in our sample since 58% of mothers reported that they had children only by the baby's father. Around 48% of mothers with a nonmarital birth were cohabiting with their baby's father. We also observed significant racial differences since 61% Whites, 59% Hispanics and only 35% Blacks cohabited with the baby's father. This statistic significantly decreased to 12% by year nine suggesting that majority of the relationships either dissolved or transitioned into marriage. At the one year follow up survey, around 5% of mothers and fathers reported to be cohabiting with a new partner. These numbers decreased for fathers (2.9%) and increased for mothers (14%) by the ninth year follow ups, suggesting that cohabitation patterns may be important in explaining the likelihood of marriage over time.

Table 2 provides an insight into how various attitudes towards marriage either converged or diverged for the unmarried parents. Mothers' and fathers' perceptions seemed to converge with respect to promarriage, traditionalism and conflict. We found a slight divergence in attitudes towards gender distrust and financial security and a substantial divergence in perceptions towards parental independence, traditional gender roles, parental independence in raising the child and patriarchal values. All these disparities suggest that a comprehensive examination of attitudinal differences may be useful in determining transitions to marriage in general and among different racial groups.

Table 3, Column 1 contains results from the base model. Compared to all other races, Black mothers were 65% more likely to delay getting married to their child's father compared to White mothers. We present Kaplan-Meier survival curves (Kaplan and Meier 1958), that were used to identify time taken for mothers to get married. Figure 1 represents the probability of not marrying and time to marriage after a nonmarital birth by mother's race. Black mothers were less likely to transition into marriage relative to White and Hispanic mothers.

Mothers who did not use drugs and had children only by the child's father got married sooner. Never attending religious services delayed marriage for mothers. Father's health was significantly correlated with marriage decisions. While fathers with depression took longer to get married, father's poor physical health sped up transition to marriage. Fathers with more children in the household were likely to marry sooner.

Column 2 contains results from the model where mother's race and mother's education were interacted to further understand whether the partial effects of race on transitions to marriage depended on the level of parents' educational attainment. Adding interaction terms for race and education did not change any of the primary findings. Interestingly, father's educational effects became statistically significant. Fathers with college education or more were likely to marry sooner compared to those with a high school degree or less.

Figures 2 and 3 represent differences in transition to marriage by father's and mother's education. Fathers with a college or graduate education were likely to marry sooner relative to their less educated counterparts, which suggests that father's education is an important determinant for marriage decisions as it may signal a greater potential to have economic resources in the future. In contrast, we found that there were no significant differences by educational attainment in the transition to marriage for mothers.¹⁰

Column 3 presents results in which interaction terms for mother's poverty status and mother's race were added as additional controls. Mother's race was found to be statistically insignificant ($p\text{-value}=0.14$) even though the hazard ratio was close to our primary findings. This suggests that allowing for the partial effects of race on transitions to marriage to depend on the level of mother's poverty level may have the potential to explain racial differences. Mother's religiosity was again statistically significant and less religious service attendance was associated with a lower likelihood of marriage. This suggests that mother's poverty interacted with race can explain the racial gap in transitions to marriage among unmarried parents.¹¹

Column 4 presents results from model 3 after including past cohabitation with the child's father (interaction terms not shown). The main finding here was that cohabitation with the child's father increased the likelihood of marriage and was able to explain the racial differences in marriage among unmarried mothers. This is an important finding and suggests that cohabitation among unmarried parents may serve as a transient stage for marriage but might not be perceived an alternative to marriage. While past cohabitation was insignificant in a model with interaction terms for race, we found it to be significant at 1% when excluding interactions for race. Finally, Column 5 presents results from model 3 after including past cohabitation to a new partner. We found that fathers' cohabitation with a new partner was associated with a lower likelihood of marriage. Besides, adding this covariate made the number of children in mother's household significantly likely to lower transitions

¹⁰We explored another model in which we interacted father's race and father's education and found that father's education effects were significant only in model 2 reported in Table 2.

¹¹In a separate model, where we added interaction terms for father's poverty status and father's race (results not reported but available upon request), the effect of mother's race remained statistically significant.

to marriage. Economic factors were found to be significant, mother's unemployment sped up marriage and father's unemployment delayed marriage.¹²

In Table 4, results using collapsed education and race categories are shown. In Columns 1 and 2, the educational attainment variable is defined as mothers and fathers with high school degree or less with everyone else as the reference category. An increase in mother's poverty sped up marriage and fathers with children were more likely to get married sooner. Column 2 reports results after including interaction terms for both parents' race and education. Compared to Whites and others, Black and Hispanic mothers with a high school or less education delayed marriage compared the more educated. While mother's education had no significant impacts, better economic status of the mother reflected in a higher income to poverty ratio sped up marriage. In Column 3, results are presented using two categories for the race variable: Blacks versus non-Blacks. Transitions to marriage were faster for non-Blacks and for father's with a college or graduate education.

In Table 5, results are presented for models in which various measures of attitudes and perceptions about marriage were used to see if these influenced transitions to marriage. Variables used in Columns 1 through 10 are consistent with the attitudinal variables described in Table 2. The first three columns report results using attitude scales. These are pro-marriage, traditional and gender distrust scales. Mother's pro-marriage scale (Column 1) was statistically significant and sped up marriage. Using the traditional scale as a control, the attitudes themselves did not have any significant impact on time to marriage but controlling for these attitudes made religious service attendance variables significant. Mothers who did not attend religious services were about 70 % more likely to delay marriage. Controlling for gender distrust scale (Column 3), mother's distrust had a significant impact in delaying marriage whereas father's distrust had no significant impact on time to marriage. We also controlled for other attitudinal variables (represented by single questions as opposed to scales measured using multiple questions) such as parental conflict, financial security, traditionalism, parental independence, gender distrust, pro-marriage, and patriarchal values. Race continued to be statistically significant with Black mothers delaying marriage more than others. Mothers who never attended religious services had a lower likelihood in the transition to marriage. Father's attitudes were not statistically significant but mother's pro-marriage and distrustful attitudes were statistically significant. If the baby's health was good, this lowered the likelihood of marriage post a nonmarital birth.¹³

In Table 6, results are reported for models that included interaction terms for attitudes and parents' race. Results in Column 1 included interaction variables between gender distrust and mother's race. Interacting father's race and gender distrust of fathers yielded interesting results (Column 2). Father's race was statistically significant, with fathers in Black, Hispanic and other racial categories having a lower likelihood of transiting into marriage as compared to White fathers. Figure 4 represents the probability of delaying marriage after a nonmarital birth by father's race. Interacting financial security with mother's and father's race

¹²We also checked whether marriage to a new partner lowered the likelihood of marriage and found it to be statistically insignificant (results not shown).

¹³This behavior could potentially be associated with perceptions of single mothers raising their children just as well as married mothers.

(Columns 3 and 4 respectively) yielded results consistent with the base model. This suggests that attitudes towards marriage can help explain some of the racial gaps in marriage among unmarried parents post a nonmarital birth.

To further test for robustness of our results, we controlled for (1) past and present incarceration of fathers in the baseline survey and (2) if the mother or father lived with both biological parents at age 15. The demographic explanation has shown that Black women wait longer to get married because of a lack of marriageable Black men mostly due to very high rates of incarceration.¹⁴ We did control for fathers' incarceration rates but found them to be insignificant.

Discussion and Conclusions

Prior studies have largely focused on the racial gap in marriage rates using data on unmarried women in general. Our study investigated the transitions to marriage among unmarried women post a nonmarital birth, drawing data from the Fragile Families Study. While a couple of studies like Carlson et al. (2004a) and Harknett and McLanahan (2004) have examined union formations and racial differences in marriage, their analysis has been limited to a period 12–30 months post a nonmarital birth. Also, previous studies have paid less attention to the role of cohabitation patterns over time as well as the role of attitudinal differences by race in influencing marriage decisions among unmarried mothers. Our study considered a much longer time frame of nine years after a nonmarital birth to provide new insights on marriage trajectories among various racial groups. While our study honed in on racial differences in the likelihood of marriage, we also emphasized the influences of educational attainment, poverty status, family structure and complexity, physical and mental health, religiosity and attitudinal differences on marriage.

Our empirical examination revealed many interesting findings. First, we found there were significant racial differences in the likelihood of marriage among unmarried mothers to their child's father. Black mothers were 60–65% more likely than White and Hispanic mothers to delay marriage. These racial disparities remained robust across a host of models that we considered. Second, we investigated whether these racial disparities could be explained by cohabitation patterns, poverty status, and attitudinal differences - we found support for the same. Cohabitation to the child's father served as a transient stage before marriage whereas past cohabitation to new partners significantly deterred marriage. These results offer evidence in favor of the common view that cohabitation is a stepping stone to marriage and are able to explain the racial gap in marriage, (Lichter et al. 2006; Manning and Smock 1995). Therefore, if Black mothers are more likely to cohabit, then their likelihood of transitioning into marriage might not differ from Whites and Hispanics. It can be argued that serial cohabitation patterns may vary significantly for different racial groups, with Blacks being less likely to cohabit than Whites and Hispanics after a nonmarital birth. Further, cohabiting unions between biological parents that dissolve after a nonmarital birth may lead to cohabitation with new partners which may undoubtedly lower the likelihood of marriage to the child's biological father.¹⁵

¹⁴There is also evidence that Black women have very low rates of exogamy (i.e., marrying outside the group)

Controlling for the effects of parents' poverty status by race, we could explain the racial gap in transitions to marriage. These economic effects may vary by race because previous research has documented that Blacks place a greater value on economic resources as a criterion for marriage than Whites and may be more resistant to marrying someone with fewer resources (Bulcroft and Bulcroft 1993). Besides, poverty levels may also be indicative of poor economic prospects experienced by many young minority men which may further deter transitions to marriage more strongly among Black women than among Whites (Wilson 2012). Differences in attitudes of gender distrust by race can also explain the racial gap in marriage. Prior studies using ethnographic data have pointed out that low marriage rates among Blacks could be due to a lack of trust and perceptions of exploitation between Black women and Black men (Anderson 2013; Carlson et al. 2004b; Patterson 1998; Wilson 2011).¹⁶ It is at least a plausible conjecture, that racial differences appear due to socio-economic reasons since fragile families are generally more disadvantaged than the general population.

Second, we found stark differences in the role of education in transitions to marriage. Fathers with a college or graduate education were more likely to transition into marriage relative to their less educated counterparts. In contrast, we found that mother's education was insignificant in determining the likelihood of marriage. We found that percentage of men with a college degree were increasing in follow-up surveys, and this might be associated with an increase in their marriageability. However, while unmarried mothers were also becoming more educated over time, this pattern might be associated with them being more independent or self-sufficient, thus deterring marriage.

Third, we found support that variables capturing religiosity, attitudes towards marriage, parents' health status, and family complexity influence transitions to marriage. Mother's religiosity captured by religious services attendance showed that never attending religious services lowered the likelihood of marriage by over 60%. This might suggest that an individual's attitude towards marriage may be influenced by social pressures, religion, spiritual guidance, and peer pressure. Parents' pro-marriage attitudes increased the chances of marriage, in line with Carlson et al. (2004b). Fathers were likely to get married sooner if they had poor physical health and had children in the household. Being depressed however delayed marriage for fathers. Mothers who did not engage in multipartnered fertility and did not use drugs were more likely to get married sooner.

We recognize that our study is not free of limitations. First, since the focus of our study was on examining transitions to marriage post a nonmarital birth, our results cannot be generalized to all unmarried couples. Second, because of disparities in nonmarital childbearing across different racial groups, we acknowledge that Black women were more

¹⁵Waller and McLanahan (2005) have documented cohabitation with the baby's father at birth being positively related to marriage one year post a nonmarital birth. While this might be true in the short run and many marriages are likely to occur in the short term, our results test this finding for cohabitation patterns over the long term. We also checked if cohabitation with baby's father at the baseline (a time-constant variable) is related to transitions to marriage. The variable was found to be insignificant but positively related to the likelihood of marriage.

¹⁶Patterson (1998) has associated gender distrust amongst Black women to slavery. In his opinion, the economic resources of White-middle class men (in contrast to the lack thereof of the same among Black men) was responsible for exerting some authority over women.

likely than Hispanic or White women to end up in our sample. Thus, our results and explanations on the racial gap in Fragile Families cannot be generalized. Third, since the data in the follow-up waves in Fragile Families is not collected annually, we were unable to capture the changing family dynamics and attitudinal factors that might have been influencing transitions to marriage during non-survey years.

Nevertheless, our results could be useful for public policies that promote marriage among unmarried parents. Counseling should focus on the positive effects of marriage for the parents and their children while addressing gender distrust and commitment issues in cohabiting unions. Relationship skills training that discourages substance abuse and multipartnered fertility can help speed up marriage. While policies aimed at promoting greater educational attainment can help in general, differential experiences of men and women with regards to education might be indicative of the need to have different programs for men and women to further encourage marriage. As alluded to earlier, marriage among a child's biological parents has been associated with positive benefits for children and higher couple instability making marriage desirable for children and society as a whole. The racial gap in marriage coupled with the emerging educational differences in the likelihood of marriage has increasingly been associated with the intergenerational transmission of inequality and disadvantage, more so for children who face greater instability in parents' relationship at the time they were born. While policies promoting marriage among unmarried parents may have a long gestational period, it might be useful for public policy to directly offer support to this increasing population of children in the US to promote their future wellbeing.

Future research needs to further examine the magnitudes and causes of the racial gaps in transitions to marriage. However, cohabitation patterns must be taken into account when exploring the contemporary marriage process. Also, attitudes towards marriage is a function of the past and current societal experiences that can vary over time. These changing attitudes are bound to create changes in the rates of marriage, cohabitation, transitions to marriage and divorce. Thus, the persistent racial gap that cannot be explained fully provides opportunities for further research using heterogeneous populations and newer datasets.

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Figure 1.

Plot shows racial differences among mothers' in Fragile Families delaying marriage. Black mothers follow a significantly different pattern as compared to Whites and Hispanics. The vertical axis represents estimated probability of delaying marriage for a cohort. The 'other' race category is omitted.

Figure 2.

Plot shows differences in time to marriage by father's education in Fragile Families. Fathers with a college or graduate education get married sooner compared to fathers with less than a college education.

Figure 3. Plot shows no significant differences in time to marriage by mothers' education in Fragile Families.

Figure 4.

Plot shows racial differences among fathers in Fragile Families delaying marriage. The vertical axis represents estimated probability of delaying marriage for a cohort. The 'other' race category is omitted.

Table 1

Descriptive statistics of sample from Fragile Families Study at baseline (or 1 year follow ups where baseline values were unavailable), reported as the mean or percentage.

Variable	Mean (or %)	
Married at 1 year follow up	9.5	
Married at 9 year follow up	14.0	
Baby's characteristics		
Female baby sex ratio	48.1	
Baby's health is fair or poor (1 year follow up)	3.3	
Family complexity		
Number of kids under 18 in Mother's household	1.3	
Number of kids under 18 in Father's household	0.9	
Mother has kids only by baby's father	58.0	
Mother cohabit with baby's father	48.0	
Mother, cohabits with new partner (1 year follow up)	5.2	
Father, cohabits with new partner (1 year follow up)	5.6	
Parental characteristics		
	Mothers	Fathers
White %	14.6	10.9
Black %	57.3	59.8
Hispanic %	25.7	26.3
other %	2.4	3.0
Age (years)	23.8	26.2
Less than High School		36.1
High School	34.8	41.5
Some College or Technical	24.0	19.0
College or Grad	3.1	3.4
Health is fair or poor	8.4	7.9
Drug/ alcohol problem	3.4	7.1
Depressed (1 year follow up)	16.7	11.9
Religious service attendance (at 1 year follow up) Never	17.9	18.0
Less often	10.1	12.7
Few per year	23.7	25.3
Few per month	21.1	21.3
Once a week	19.7	15.8
Few per week	7.5	7.0
Employed	67.6	75.9
Income-to-poverty ratio	1.6	2.2

Table 2

List of variables describing attitudes towards marriage

Attitudes	Description	Mean or % yes	
		Mothers	Fathers
(1) Promarriage Sc.	Promarriage scale (min 1– max 4)	2.68	2.77
(2) Traditionalism Sc.	Traditional attitudes scale (min 1–max 4)	2	2.34
(3) Gender Distrust Sc.	Gender distrust scale (min 1–max 4)	2.1	1.9
(4) Conflict Sc.	Conflict Index (min 1 – max 3)	2.54	2.54
(5) Financial Security	The main advantage of marriage is financial security	43.70%	45.80%
(6) Traditionalism Q	It is better if husband earns the main living and woman cares for family	27.60%	37.27%
(7) Parental Independence	A single mother can bring up a child as well as a married couple	83.70%	55.60%
(8) Gender Distrust Q	In dating, a man is largely out to take advantage of a woman	17.70%	16%
(9) Promarriage Q	Living together is just the same as being married	46.30%	47.60%
(10) Patriarchal Values (Trad. Q)	The imp decisions in the family should be done by the man	13.10%	33.30%

Table 3

Predicting time to marriage after a nonmarital birth (1) Base model with interaction terms for mothers' race and education (3) Base model with interaction terms for mothers' race and poverty. (4) Base model controlling for cohabitation with baby's father (5) Base model controlling for cohabitation with baby's father and with new partner. Hazard ratios from Cox proportional hazard models are shown. Hazard ratios for city-fixed effects are not shown

Variables	(1)	(2)	(3)	(4)	(5)
Baby's characteristics					
Female	0.83	0.82	0.83	0.86	1.08
Health is excellent (base)					
very good	1.04	1.04	1.03	1.03	1.40
good	0.39	0.39	0.38	0.41	0.52
fair	0.38	0.39	0.38	0.38	0.26
poor	3.46	3.54	3.10	2.7	11.09
Race and Age					
Mother is White (base)					
Black, non-Hispanic	0.35 [*]	0.29 [†]	0.33	0.58	0.21 ^{***}
Hispanic	0.55	0.46	0.48	0.64	0.41 [†]
other	1.18	1.17	1.56	0.38	1.46
Father is White (base)					
Black, non-Hispanic	0.77	0.81	0.75	0.54	0.65
Hispanic	1.11	1.16	1.13	1.15	1.11
other	0.27	0.32	0.32	0.22	0.124
Mother's age	1.00	1.00	1.00	0.99	1.02
Father's age	1.00	1.00	1.00	1.00	0.99
Education					
Mother, high school or less (base)					
some college, tech	1.71	1.36	1.64	1.76	2.32
college or grad	1.25	0.61	1.10	1.59	1.67
Father, high school or less (base)					
some college, tech	1.27	1.23	1.22	1.32	1.97
college or grad	4.22	4.10 [†]	4.47 [†]	3.88	4.9

Variables	(1)	(2)	(3)	(4)	(5)
Parental health					
Mother's health, excellent (base)					
very good	1.07	1.05	1.10	1.07	0.79
good	0.88	0.87	0.87	0.87	0.78
fair	0.53	0.53	0.54	0.50	0.23
poor	0.54	0.54	0.57	0.49	0.62
Father's health, excellent (base)					
very good	1.35	1.36	1.36	1.27	1.42
good	1.42	1.42	1.43	1.41	1.48
fair	0.61	0.61	0.61	0.56	0.76
poor	3.31 *	3.25 *	3.28 *	3.63 *	4.17
Mother had no drug problem	6.43 [†]	6.63 [†]	6.38 [†]	6.44 [†]	5.27
Mother had depression	1.38	1.44	1.35	1.36	0.84
Father had depression	0.46 *	0.42 *	0.46 [†]	0.49 *	0.31 *
Religious service attendance					
Mother's, few, week (base)					
once a week	0.61	0.62	0.63	0.61	0.85
few per month	0.50	0.52	0.51	0.47	0.93
few per year	0.61	0.59	0.60	0.55	1.32
less often	0.48	0.48	0.48	0.43	1.28
never	0.34 [†]	0.35	0.34 [†]	0.29	0.71
Father's, few, week (base)					
once a week	1.49	1.43	1.49	1.42	1.18
few per month	0.73	0.71	0.75	0.72	0.36
few per year	0.79	0.75	0.77	0.78	0.36
less often	0.88	0.85	0.88	0.89	0.63
never	0.62	0.59	0.61	0.61	0.42
Economic factors					
Mother is not employed	1.69	1.77	1.74	1.48	2.50 [†]
Father is not employed	0.65	0.68	0.66	0.68	0.50 [†]

Variables	(1)	(2)	(3)	(4)	(5)
Mother, income to poverty ratio	1.21	1.23	1.22	1.17	1.33
Father, income to poverty ratio	0.92	0.92	0.92	0.90	0.79
Family structure & complexity					
No. of kids the mother has, under 18	0.89	0.90	0.90	0.91	0.92 [*]
No. of kids the father has, under 18	1.53 ^{***}	1.53 ^{***}	1.52 ^{***}	1.48 ^{***}	1.56 ^{***}
No. of kids the mother has by baby's father	1.69 [†]	1.71 [†]	1.68 [*]		2.14 [†]
Cohabit with baby's father (lagged)				2.62	
Mother, cohabits with new partner (lagged)					0.00
Father, cohabits with new partner (lagged)					0.11 [†]
Interactions with Mother's race					
Black, non-Hispanic; hs or less		1.00			
Black, non-Hispanic; some coll, tech		1.33			
Black, non-Hispanic; coll or grad		1.74			
Hispanic; hs or less		1.00			
Hispanic; some coll, tech		1.45			
Hispanic; coll or grad		4.97			
other; hs or less		1.00			
other; some coll, tech		0.78			
other; coll or grad		0.00			
Black, non-Hispanic, income-poverty ratio			1.04		
Hispanic, income-poverty ratio			1.07		
other, income-poverty ratio			0.90		
Interactions, cohabitation and race				yes	no
Observations	4,471	4,471	4,471	4,471	4,458

 $p < 0.001$

**
 $p < 0.01$

*
 $p < 0.05$

†
 $p < 0.1$

Table 4

Predicting time to marriage after a nonmarital birth after collapsing education and race categories (1) Model with collapsed education categories, less than high school educated versus others (base). (2) adding interaction terms for parents' race and education (3) Model with collapsed race categories, Blacks (base) versus non-Blacks. Hazard ratios from Cox proportional hazard models are shown. Hazard ratios for city-fixed effects are not shown

Variables	(1)	(2)	(3)
Baby's characteristics			
Female	0.86	0.86	0.80
Health, excellent (base)			
very good	1.03	1.00	0.99
good	0.34	0.35	0.28
fair	0.39	0.37	0.33
poor	3.12	3.43	2.32
Race and Age			
Mother is White;			
Black, non-Hispanic;	0.38 [*]	0.28 [†]	base
Hispanic	0.62	0.51 [†]	
other	1.77	0.31	
non-Black			2.48 [*]
Father is White;			
Black, non-Hispanic;	0.87	0.57	base
Hispanic	1.10	1.11	
other	0.32	1.37	
non-Black			1.03
Mother's age	1.00	1.00	1.00
Father's age	1.01	1.02	1.01
Education			
Mother, high school or less (vs. others)	1.42	1.11	base
some coll, tech			1.63
college or grad			1.35
Father, high school or less (vs. others)	0.78	0.68	base
some coll, tech			1.16
college or grad			4.06 [†]
Parental Health			
Mother's health, excellent (base)			
very good	1.08	1.11	1.02
good	0.88	0.89	0.84
fair	0.47	0.48	0.51
poor	0.50	0.48	0.48
Father's health, excellent (base)			

Variables	(1)	(2)	(3)
very good	1.36	1.35	1.33
good	1.40	1.41	1.40
fair	0.56	0.57	0.60
poor	3.13 [†]	3.26 [†]	3.40 [*]
Mother had no drug problem	5.94 [†]	6.55 [†]	5.48 [†]
Mother had depression	1.36	1.40	1.39
Father had depression	0.48 [†]	0.47 [†]	0.48 [*]
Religious service attendance			
Mother's, few per week (base)			
once a week	0.60	0.59	0.54
few per month	0.58	0.58	0.47
few per year	0.70	0.69	0.60
less often	0.48	0.48	0.41
never	0.41	0.41	0.31 [*]
Father's, few per week (base)			
once a week	1.44	1.46	1.44
few per month	0.71	0.71	0.76
few per year	0.75	0.77	0.84
less often	0.86	0.87	0.98
never	0.59	0.61	0.66
Economic factors			
Mother is not employed	1.58	1.53	1.67
Father is not employed	0.60	0.62	0.59
Mother, income to poverty ratio	1.29 [*]	1.30 [*]	1.18
Father, income to poverty ratio	0.96	0.96	0.93
Family complexity			
Number of kids the mother has, under 18	0.90	0.90	0.92
Number of kids the father has, under 18	1.49 ^{**}	1.51 ^{**}	1.48 ^{**}
Number of kids the mother has by baby's father	1.86 [*]	1.84 [†]	1.67 [†]
Race * Education (interaction)			
	no	yes	no
Observations	4471	4,471	4,471

 $p < 0.001$,

**
 $p < 0.01$

*
 $p < 0.05$

[†]
 $p < 0.1$

Table 5

Predicting time to marriage after controlling for different attitudes towards marriage using Table 2. Hazard ratios from Cox proportional hazard models are shown. Hazard ratios for city-fixed effects are not shown. Results are truncated for brevity. Mothers' and fathers' health and economic factors are not shown.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Promar.	Trad.	GD	Conflict	Fin. Sec	Trad	Indep.	GD Q	Promar Q	Patr. Val	
Baby's characteristics										
Female	0.84	1.02	0.82	0.81	0.83	0.93	0.87	0.86	0.89	0.99
Health, excellent (base)										
very good	1.14	1.03	1.00	0.94	0.95	1.00	0.97	0.97	1.06	1.08
good	0.49	0.41	0.54	0.39 [†]	0.40 [†]	0.42	0.40 [†]	0.38	0.44	0.43
fair	0.52	0.41	0.37	0.38	0.42	0.38	0.38	0.44	0.37	0.43
poor	2.78	3.17	2.35	3.40	3.11	2.94	2.04	2.66	3.69	3.08
Race and age										
Mother is White (base)										
Black, non-Hispanic	0.24 [*]	0.28 ^{**}	0.28 [*]	0.24 ^{**}	0.28 [*]	0.28 [*]	0.32 [†]	0.30 [*]	0.28 [*]	0.28 ^{**}
Hispanic	0.46	0.41	0.58	0.39	0.44	0.48	0.53	0.51	0.52	0.41
other	1.28	0.98	0.82	0.75	1.00	1.00	1.18	0.93	1.19	1.02
Father is White (base)										
Black, non-Hispanic	0.66	0.71	0.85	1.19	0.91	0.74	0.67	0.74	0.71	0.69
Hispanic	1.12	1.09	1.13	1.32	1.38	1.08	0.98	1.12	1.07	1.06
other	0.29	0.34	0.88	0.80	0.45	0.38	0.48	0.54	0.28	0.35
Mother's age	1.00	1.00	1.00	1.00	0.99	1.00	0.99	1.00	1.00	1.00
Father's age	1.02	1.01	1.02	1.01	1.02	1.01	1.02	1.02	1.02	1.01
Education										
Mother, high school or less (base)										
some college, tech	1.68	1.85	1.57	1.97	1.90	1.75	1.70	1.69	1.75	1.82
college or grad	1.64	1.72	1.50	1.99	1.90	1.70	1.61	1.61	1.83	1.79
Father, high school or less										
some college, tech	1.01	1.12	0.99	1.13	1.11	1.06	0.96	0.95	1.01	1.11
college or grad	5.05 [†]	5.15 [†]	4.46 [†]	4.10	3.85	4.20 [†]	3.75 [†]	4.25 [†]	3.77	5.04 [†]

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Promar.	Trad.	GD	Conflict	Fin. Sec	Trad Q	Indep.	GD Q	Promar Q	Patr. Val
Parental health										
Mother had no drug problem	4.66	4.76	4.76	6.48 [†]	5.51	4.65	4.61	5.20	4.61	4.61
Mother had depression	1.45	1.64	1.64	1.64	1.43	1.67	1.60	1.77	1.51	1.58
Father had depression	0.42 ^{***}	0.45 [†]	0.52	0.48 [†]	0.39 [*]	0.46 [†]	0.46 [*]	0.48	0.45 [*]	0.47 [†]
Religious service attendance										
Mother's, few per week (base)										
once a week	0.67	0.56	0.50	0.53	0.52	0.53	0.56	0.51	0.59	0.54
few per month	0.44	0.44	0.35	0.42	0.37 [†]	0.44	0.42	0.35 [†]	0.42	0.43
few per year	0.67	0.52	0.47 [†]	0.62	0.57	0.58	0.54	0.48 [†]	0.55	0.47
less often	0.65	0.46	0.44	0.52	0.41	0.47	0.45	0.40	0.47	0.42
never	0.45	0.32 [*]	0.28 ^{***}	0.28 [*]	0.28 [*]	0.31 [*]	0.30 [*]	0.26 ^{***}	0.33 [*]	0.29 ^{***}
Father's, few, week (base)										
once a week	0.89	0.85	1.00	0.85	0.91	0.84	0.87	0.96	0.88	0.85
few per month	0.54	0.55	0.55	0.44	0.51	0.53	0.52	0.53	0.50	0.54
few per year	0.57	0.46	0.57	0.49	0.56	0.53	0.56	0.53	0.51	0.48
less often	0.79	0.74	0.68	0.62	0.70	0.67	0.64	0.67	0.69	0.72
never	0.38	0.40	0.37	0.42	0.50	0.36	0.38	0.37	0.38	0.40
Family complexity										
No. of kids, mother, under 18	0.83	0.89	0.85	0.85	0.86	0.89	0.91	0.85	0.89	0.89
No. of kids, father, under 18	1.59 ^{***}	1.53 ^{***}	1.57 ^{***}	1.52 ^{***}	1.54 ^{***}	1.49 ^{***}	1.45 ^{***}	1.53 ^{***}	1.48 ^{***}	1.51 ^{***}
Mother's kids by baby's father	1.55	1.49	1.51	1.53	1.68 [†]	1.52	1.45	1.50	1.50 [†]	1.53
Parental attitudes										
Mother's attitudes	2.19 ^{***}	1.16	0.55 [*]	1.74	0.91	1.20	0.68	0.44 [*]	0.58 [*]	0.89
Father's attitudes	1.02	1.18	1.17	1.07	0.89	1.11	0.86	1.10	1.37	1.16
Observations	3,847	4,078	3,910	3,594	4,069	4,106	4,069	3,986	4,067	4,118

p < 0.001,

**
p < 0.01

*
p < 0.05

$$1.0 > d_j^*$$

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Table 6

Predicting time to marriage after interacting attitudes with race (1) Model with interaction terms for gender distrust scale and mothers' race (2) Model with interaction terms for gender distrust scale and fathers' race (3) Model with interaction terms for financial security and mothers' race (4) Model with interaction terms for financial security and fathers' race. Hazard ratios from Cox proportional hazard models are shown.

Variables	(1)	(2)	(3)	(4)
Baby's characteristics				
Female	0.82	0.82	0.83	0.83
Health, excellent (base)				
very good	0.98	0.95	0.93	0.94
good	0.53	0.54	0.38 [*]	0.39 [†]
fair	0.41	0.36	0.44	0.43
poor	2.27	2.56	2.92	3.32
Race and age				
Mother is White (base)				
Black, non-Hispanic	0.13	0.25 [*]	0.34 [†]	0.28 [*]
Hispanic	1.03	0.52	0.56	0.44
other	1.22	0.68	1.28	0.95
Father is White (base)				
Black, non-Hispanic	0.87	0.17 ^{**}	0.93	1.11
Hispanic	1.15	0.10 [*]	1.46	1.45
other	0.94	0.03 [*]	0.52	0.46
Mother's age	1.00	1.00	0.99	0.99
Father's age	1.02	1.02	1.02	1.02
Education				
Mother, high school or less (base)				
Mother, some college, tech	1.52	1.57	1.94	1.91
Mother college or grad	1.55	1.41	1.97	1.88
Father, high school or less				
Father, some college, tech	1.01	0.95	1.10	1.12
Father, college or grad	4.65 [†]	4.68 [†]	3.97	3.78
Parental health				
Mother's health, excellent (base)				
very good	1.18	1.16	1.20	1.22
good	0.85	0.82	0.89	0.94
fair	0.77	0.72	0.53	0.56
poor	0.40	0.39	0.56	0.53
Father's health, excellent (base)				
very good	1.56	1.50	1.80 [†]	1.71
good	1.42	1.40	1.58	1.51
fair	0.50	0.49	0.71	0.71

Variables	(1)	(2)	(3)	(4)
poor	1.67	1.83	2.69	2.51
Mother had no drug problem	4.73	4.63	5.70	5.68
Mother had depression	1.60	1.64	1.48	1.43
Father had depression	0.54	0.52	0.38 [*]	0.39 [*]
Religious service attendance				
Mother's, few per week (base)				
once a week	0.50	0.49	0.50	0.52
few per month	0.35	0.34 [†]	0.36 [†]	0.38
few per year	0.45 [†]	0.46 [†]	0.54	0.58
less often	0.43	0.42	0.37	0.41
never	0.27 ^{**}	0.27 ^{**}	0.26 [*]	0.29 [*]
Father's, few per week (base)				
once a week	1.04	0.98	0.94	0.87
few per month	0.58	0.56	0.50	0.48
few per year	0.59	0.57	0.57	0.54
less often	0.69	0.68	0.71	0.68
never	0.38	0.40	0.50	0.48
Economic factors				
Mother is not employed	1.43	1.43	1.64	1.57
Father is not employed	0.75	0.70	0.77	0.78
Mother, income to poverty ratio	1.12	1.13	1.18	1.16
Father, income to poverty ratio	0.95	0.97	0.95	0.95
Family complexity				
No. of kids the mother has, under 18	0.85	0.85	0.86	0.86
No. of kids the father has, under 18	1.56 ^{**}	1.56 ^{**}	1.53 ^{**}	1.54 ^{**}
No. of kids the mother has by baby's father	1.52	1.43	1.67 [*]	1.69 [†]
Attitudes and interaction terms				
Father's gender distrust	1.16	0.40 [*]		
Mother's gender distrust	0.53	0.58 [*]		
Father's gender distrust; father is Black		2.65 ^{**}		
Father's gender distrust; father is Hispanic		4.07 ^{**}		
Father's gender distrust; father is other		6.19 ^{**}		
Attitude [*] race (interactions)	yes	yes	yes	yes
Observations	3,910	3,910	4,069	4,069

 $p < 0.001$,

**
 $p < 0.01$

*
 $p < 0.05$

†
 $p < 0.1$

Hazard ratios for city-fixed effects and some insignificant interaction terms are not shown.

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