Racial Intermarriage in the Americas: Comparing Brazil, Cuba and the United States

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Abstract

In this paper we compare patterns of racial intermarriage in Brazil, Cuba and the United States with particular attention to educational differences. These countries have similar shares of white and black populations but remarkably different racial and social stratification and classification systems. For example, educational differences by race are particularly great in Brazil and almost nonexistent in Cuba, with the United States in between and there are strong race mixture ideologies and a large population denoted as mixed race in Brazil and Cuba but not in the United States. Using data from newly available anonymized and harmonized individual census microdata for the 2000 round of censuses of Brazil, Cuba, and the United States, we use log-linear models to compare racial intermarriage in the three countries. These models allow us to effectively control for geographic differences in the distribution of the population by race, educational level and type of union. Our findings reveal that racial intermarriage is three times as common in Brazil compared to the United States, where it is least common, with Cuba being intermediate at roughly twice the rate of the United States. The educational gradients for intermarriage are negative for Cuba and Brazil, with intermarriage greater among the less educated, while overall it is nonexistent in the United States although it is positive for Afro-Americans.

1. Introduction

Sociologists and demographers have long been interested in racial intermarriage to examine race relations but the scholarly literature is dominated by the U.S. case. That scholarship has emphasized the rigidity of the black-white boundary, especially when compared to marriages involving whites with Asians or Hispanics (Kalmijn 1993, Qian and Lichter 2007, Fu 2010). The low levels of black-white intermarriage in the United States probably stem most directly from Jim Crow segregation and anti-miscegenation laws in recent American history. As late as 1967, 16 of the 50 U.S. states had anti-miscegenation laws but more than five decades later, black-white marriage remains rare, especially when compared to marriage with Asians and Hispanics (Qian and Lichter 2007, Fryer 2007, Fu 2010).[1] Although one may argue that the recent increase of black-white intermarriage represent growing social interactions and the blurring of black-white distinctions, the fact that they still hardly occur reveals the persistence of a rigid black-white boundary in the United States, the paradigmatic case for understanding race relations. However, at least two countries in the Americas – Brazil and Cuba – have black populations that are at least as important as the United States. Brazil had fully 11 times as many African slaves as the United States and Cuba had twice as many (Eltis 2014). Today, the afro-descendant population in Brazil comprises roughly half of the Brazilian population and more than a third of the Cuban population, compared to about one-eighth of the U.S. population.

Many Latin Americans, including Brazil and Cuba, celebrate their race mixture or mestizaje and the near absence of segregation or anti-miscegenation laws in their countries, which they use as proof of benign racism and thus their moral superiority over the United States (Wade 1997, Telles 2004). Since interracial marriage is the site of contemporary race mixture, one would expect higher rates of interracial marriage in Cuba and Brazil than the United. Indeed, descriptive evidence for Brazil suggests this (Fryer 2007). Certainly, the existence of so many mixed race persons in Brazil, Cuba and other Latin American countries, which has been the

[1] Although the proportion of whites married to blacks steadily increased by several times from 1960 to 2000, only about 0.90 percent of married white men and 0.45 percent of married white women were married to blacks in 2000 (Fryer 2007). This figure is particularly striking considering that blacks constitute about 12 percent of the national population.

inspiration for mestizaje ideologies (von Vacano 2012, Skidmore 1976, Wade 1997), was largely attained during colonization through rape, though also through concubinage and intermarriage (Martinez Alier 1974). Over several generations, such unions led to a large mixed race population that was widely recognized as such and its existence, bolstered by elite nation-making narratives of mestizaje, has arguably encouraged (or not discouraged) racial mixture in the modern period. Despite this, current racial intermarriage in Brazil is well less than random (Telles 2004) and social taboos against intermarriage persist in Brazil and Cuba (Fernandez 2010, Osuji 2013). We seek to compare levels and patterns of racial intermarriage in thee countries with strikingly distinct racial and social stratification systems: Brazil, Cuba and the United States. We also pay particular attention to educational differences, which vary from nearly nonexistent (Cuba) to extreme (Brazil).

Why Study Intermarriage?

Intermarriage has many useful properties for understanding race relations in a given society. Its occurrence probably represents the most intimate of interracial social interactions and thus interracial marriage represents the breakdown of rigid social boundaries at the individual and micro-societal level. According to Gordon's (1964) assimilation theory, intermarriage represents the undermining of the ultimate barrier to full social acceptance of excluded or formerly excluded outgroups (Qian and Lichter 2007). At the individual or couples level, its occurrence suggests that intermarried partners accept each other as social equals and represents high levels of social tolerance or low levels of social distance (Gordon1964, Qian and Lichter 2007), at least at the time of marriage. Given that marriage involves a long-term commitment, particularly in formal unions, it signals particularly strong levels of racial tolerance. At the societal level, it is measurable for a large segment of the population (i.e. the married population), allowing an examination of the degree or pervasiveness of racial tolerance or openness or, in Barthian terms, the degree of rigidity of racial boundaries (Barth 1969, Wimmer 2008). By calculating intermarriage rates, analysts may then examine changes over time or differences across nations or by ethnic group. Measured over time, shifts in rates of intermarriage may represent changes in the rigidity of racial boundaries in a society. For this paper, differences in intermarriage across nations or across educational segments reflect the relative rigidity of racial boundaries across countries or social strata (Heaton and Mitchell 2012).

The occurrence and pervasiveness or intermarriage may also influence social norms about its acceptability, especially for younger generations who use these norms to inform their own choices of marital partners. Furthermore, it may also lead to a growing mixed race population in next generation, which itself is more likely to intermarry. Moreover, intermarriage comingles relative, friends and other persons in the social networks of intermarried partners, creating more interracial ties throughout these societal networks.

However, the extent to which intermarriage itself represents a reduction of inter-racial barriers in general is questionable, as the Brazilian case has shown. Telles (2004) shows that Brazilian levels of intermarriage (and residential segregation), which suggest substantial white-black social interaction by U.S. standards, coexist with persistent racial discrimination and a steep racial hierarchy, where the top rungs of Brazil's steep income pyramid is nearly all white. He refers to the coexistence of these relatively fluid "horizontal race relations" with steep "vertical race relations" as the enigma of Brazilian race relations, as they challenge American theories like assimilation that claimed high levels of intermarriage were key determinants of the extent to which nonwhites would assimilate or be accepted by whites. Interracial marriage is more accepted, at least among popular classes, but racial inequality and particularly the near absence of blacks in the middle class and in universities had been widely accepted as natural, at least until the past decade or so[2]. In Brazil and probably in much of Latin America, race was often interpreted as an epiphenomenon of class (Hasenbalg 1979, González-Casanova 1979, Moore 1988, De la Fuente 2001) where racial discrimination has been denied as a major impediment to stratification and mobility. However, several academic studies have shown the independent effect of race on socioeconomic status in Brazil (Silva 1985, Telles 2004) and increasingly in other countries of Latin America (Florez et al 2001, Telles, Flores and Urrea 2014).

More importantly, studies have shown that interracial marriage is less than random, even among persons of the same social class or educational level in all three countries (Telles 2004).

[2] That has probably changed in the past decade or so as affirmative action in higher education is now found in most public universities and public opinion now recognizes racial discrimination as a leading social problem (Cicalo 2012).

Thus, analysis of educational differences in intermarriage is crucial for understanding the extent to which race is independent of class, in what socioeconomic sectors racial barriers are most rigid and how much of intermarriage can be explained by class/educational attainment. In the United States where there has been significant educational upgrading for the black population, trends by educational attainment show that black-white intermarriage increases with education, particularly for black men but that racial intermarriage is quite limited at all educational levels (Qian and Lichter 2007). We know much less about intermarriage patterns by education or socioeconomic status in Brazil and virtually nothing about Cuba.

Based on descriptive data that does not account for the marginal distributions, Brazil reveals an opposite trend in comparison to the United States. In Brazil, where educational inequality is particularly great, descriptive findings have shown that intermarriage is especially common in lower educational sectors (Telles 2004, Silva 1985), much of which can be explained by the relative absence of blacks in higher educational sectors but, as far as we know, we do not have data to know the extent to which other factors may also explain educational differences (Gullickson and Torche 2014). For Cuba, we do not know how intermarriage may differ by education but we expect that educational differences are probably minimal considering that racial differences by education are small.

Another demographic factor that is important for understanding comparative differences in racial intermarriage is in the extent of cohabitation. A recent rise in cohabitation rates in the United States accounts for some of the increase in intermarriage (Qian and Lichter 2007), though, as far as we know, we do not know the effects of cohabitation in Brazil or Cuba, where cohabitation rates are substantial and have increased dramatically in recent years (Esteve et al. 2013). We do know, however, that educational and racial intermarriage in Latin America is more common among cohabiting couples than among married ones but in recent decades the difference has narrowed substantially in all countries (Esteve et. al. 2012).

Why Brazil and Cuba?

Brazil and Cuba stand out as the largest destination of enslaved African in Latin America and those two countries currently have the proportionally largest black population. According to the 2010 Brazilian Census and the 2002 Cuban Census, the population considered as Afro-descendant (*preto* and *pardo* in Brazil ; *negro* and *mulato* in Cuba) comprised 51 percent of the

Brazilian population and 35 percent of the Cuban population (Telles and the Project on Ethnicity and Race in Latin America 2014). Most of the remaining population in both countries is considered white, products of Iberian colonization and subsequent immigration from Europe. Moreover, unlike most Latin American countries with mestizaje narratives, Brazil and Cuba's narratives have celebrated African contributions as central to the nation (Skidmore 1976, De la Fuente 2001). Most others have touted the mixture of white and indigenous elements while marginalizing or ignoring those from Africa (Hooker 2005 Telles and Garcia 2013).

Although no compelling data exist, Brazil and Cuba are likely to have had much biological mixture during colonization as men greatly outnumbered women among Spanish and Portuguese immigrants and thus men often sought out nonwhite females as sexual mates, concubines and partners. Later immigration tended to be white and sex ratios more balanced but large mixed race populations had been established. This compares to the more balanced sex ratio in the U.S. colonies, where families predominated among immigrants to the colony.

In the nineteenth century, their large nonwhite population and widespread mixture became a source of consternation for Latin American elites preoccupied with becoming modern (Telles and PERLA 2014). However, from the 1920s to 1940s, when racial science was becoming discredited, elites throughout Latin America created national narratives of mestizaje, turning earlier national ideologies of whitening, white supremacy and mulato degeneracy on their heads. Nonetheless, one would expect that mestizaje ideologies, which continue to be widely held (Telles and Garcia 2013) would affect intermarriage itself. Another important factor is cultural mestizaje or syncretism, which can also be found in music, food and religion and in the "lived experiences" of Latin Americans (Wade 2005), perhaps further reminding them of a greater tolerance for mixture generally.

The persistence of mixed race categories such as mulato and mestizo, has been used as proof of the importance of race mixture in Latin America. However, the existence of a pardo or mulato category in Brazil and Cuba is both cause and consequence of an ideology of race mixture and not an automatic result of actual race mixture. Certainly, mulato categories existed in the U.S. Census from 1870 to 1920 but their disappearance was related to the growing prevalence of legal segregation, anti-miscegenation laws and the institution of the one-drop rule, where black-white mixtures were relegated to the black category (Davis, 1991, Nobles 2000).

Despite its much larger black population, Brazil is perhaps the most studied country regarding issues around race after the United States, though the amount of work on the former is much greater. On racial intermarriage, several national studies have shown rates and patterns of intermarriage at the national level (Silva 1985, Telles 1994, 2004, Heaton and Mitchell 2012, Gullickson and Torche 2014). Ethnographic studies have further shown how racist attitudes about intermarriage abound in society and among families and friends of intermarried couples, despite ideologies of mestizaje and in Cuba, despite government efforts to eradicate racism (Sherif 2001, Osuji 2013).

Cuba is like Brazil in terms of its mestizaje narratives but it contrasts with Brazil and the United States because of its much smaller black-white educational gap, due to decades of state socialism. At the same time, racial prejudices and discrimination persist, despite state planning expectations that the end of structural inequalities and several decades of generational replacement, bolstered by a socialist anti-racist education (Fernandez 2010), would end or greatly diminish the previous and deep-seated racist attitudes of Cuban society. This is probably the result of Marxist inspired theories that saw race as an epiphenomen of class, which were also rampant in Brazil (Hasenbalg 1985, de la Fueute 2001). However, analysts have noted that the "special period" since the end of Soviet subsidies in 1992 has heightened racial inequality, as whites have had far greater access to the hard currency introduced by immigrant remittances and the growing tourist industry (de la Fuente 2001, Sawyer 2006, Fernandez 2010).

Unfortunately, there has been almost no analysis of racial intermarriage (or race relations generally) in contemporary Cuba except for some descriptive data from the 1981 Census (Catasús 1989) and at least one unrepresentative local survey (Rodriguez Ruiz 2004 cited from Fernandez 2010), although a pioneering ethnography was recently produced for interracial marriage in Cuba (Fernandez 2010). Fernandez examines "why contemporary interracial couples are the targets of racist commentary and social disapproval if the nation has such a long tradition of mestizaje and decades of socialist equality." There has been no systematic quantitative analysis of racial intermarriage largely because national Censuses of Cuba have not been available in a format for such analysis.

In sum, the comparisons of the three nations represent quite distinct racial stratification systems, including factors thought to affect intermarriage. For example, educational differences by race are particularly great in Brazil and almost nonexistent in Cuba, with the United States in

between and there are strong race mixture ideologies in Brazil and Cuba but not in the United States. Also, racial politics varies widely among the three countries. Most notably, the United States ended segregation and instituted civil rights laws and affirmative action policies since the 1960s, Cuba has had a socialist government that proclaimed victory against racial inequality since the 1960s and Brazil was considered a racial democracy from the 1930s until fairly recently, perhaps when it instituted affirmative action in higher education since about 2001. However, racial prejudices and discrimination endure in all three societies.

The recent availability of anonymized and harmonized individual census microdata for the 2000 round of censuses of Brazil, Cuba, and the United States allows a comparative analysis of racial intermarriage in the three countries, using log-linear techniques, which allows us to effectively control for internal geographic differences in the distribution of the population by race, educational level and type of union. Does racial intermarriage operate in the same manner in Brazil, Cuba, and the United States? Where is white and black intermarriage more likely to occur? How does racial intermarriage vary by educational attainment? Are the better educated more likely to intermarry? Rather than analyze these with regard to a single country as is usually done, we analyze this with respect to three large countries with afrodescendant populations. To answer all these questions we analyze patterns of racial intermarriage selecting a sample of young couples, using the same methodology and applying similar controls in each country. As far as we know, this is the first directly comparative examination of intermarriage of these three countries.

2. Data

Data for this research came from the census microdata samples harmonized by the Integrated Public Use of Microdata Series - International (IPUMS-I) project (Minnesota Population Center 2011). We selected data from the following samples of individuals organized into households: Brazil 2000 (6%), United States 2000 (5%) and Cuba 2002 (10%). IPUMS constructs a family interrelationship variable named SPLOC that indicates whether or not the person's spouse lived in the same household and, if so, gives the person number of the spouse (Sobek and Kennedy 2009). SPLOC allows researchers to attach characteristics of the spouses to each partnered person (i.e., race and educational attainment).

For this analysis, we selected all co-residing couples in which women were 25-34 years old at the time of the census. Alternative age specifications for selecting couples yielded similar results. Intermarriage research based on prevailing couples (couples that have survived until the Census date) often deals with young couples only to minimize biases from union dissolution, remarriage, and educational upgrades after union formation. However, recent research has shown for the United States that prevailing marriages_are overwhelmingly attributable to new marriage patterns and that the effects of union dissolution, remarriage, and educational upgrades on cross-sectional patterns of assortative mating are rather modest (Schwartz and Mare 2012). Therefore, we can reasonably assume that the differences in intermarriage patterns among Brazil, Cuba and the United States are not due to cross-national differences in union dissolution, remarriage, and educational upgrades after union formation. Another reason to limit the analysis to young couples is to select couples that were formed within the same political and social period. Finally, the percentage of women 25-34 in unions ranges from 60% at age 25 in the three countries to 82% in Brazil, 74% in Cuba and 78% in the United States at age 34. After age 34, the percentage of women in unions stabilizes. Thus, the 25-34 age group provides a set of couples of fairly recent formation and high prevalence of women in unions.

For each couple, the variables of interest are race and educational attainment of the spouses, type of union and region of residence. In Brazil and the United States, race is self-reported by the Census respondent given a set of pre-defined categories, though that person reports the race of other household members. In Cuba, unlike any other country in the Americas, interviewers report the skin color of the respondent. In all three countries, the respondent indicates the skin color of the other household members. The Brazilian questionnaire includes the following categories: 'white' (*branco*), 'black' (*negro*), 'yellow' (*amarillo*), 'mixed' (*pardo*), and 'indigenous' (*indigena*). In Cuba, the options are: 'white' (*blanco*), 'black' (*negro*) and 'mixed' (*mestizo or mulato*). The question on race in the US census includes 14 options plus an 'open' category to be filled by the respondent in case none of the pre-defined categories satisfies the respondent. The first two options in the US questionnaires are 'white' and 'black' (also listed as '*african american'* or '*negro*'). We excluded Hispanics from these two categories. Therefore, technically speaking, the 'white' category in the United States corresponds to 'Non-Hispanic whites' and the 'black' category corresponds to 'Non-Hispanic blacks'. Persons of mixed race were not identified by a single category in the United States, although persons who considered

themselves as such could have checked all the racial categories that applied. There are only 36,664 persons (0.26%) of all ages in the 5% census samples of the United States 2000 that had checked the 'white' and 'black' boxes together. We decided against including them in our study as 'mixed' races for the US because they are not comparable to mixed race persons in Brazil and Cuba where there was never anything like a one-drop rule and because they represent a extremely low number compared to 1.6 million 'black' and 10.7 million 'white' in the 5% sample of the US. They were coded as 'other'. In summary, the final racial classification includes the following categories: 'white', 'mixed', 'black' and 'other' in Brazil; 'white', 'mixed' and 'black' in Cuba; and 'white', 'black' and 'other' in the United States.

We classified educational attainment into 4 categories: 'Low', 'Medium-Low', 'Medium-High', and 'High'. These labels were used for the sake of clarity but they represent country specific classifications because each country has its own educational distribution. For example, young women 25-34 with 3 or less years of school in the United States are negligible (less than 1%) but in Brazil they represent more than 13%. Similar contrasts are found among the most educated: 60% of women 25-34 had at least some college in the United States but only 8.3% in Brazil. The final thresholds were: '0 to 3', '4 to 7, '8 to 11' and '12 or more' years of school in Brazil; 'Primary', 'Lower Secondary', 'Secondary Completed' and 'College Completed' in Cuba; 'No High School Diploma', 'High School Diploma', 'Some College' and 'College Completed' in the United States. Alternative classifications are consistent with overall results.

Type of union is introduced as a control variable. We distinguish between 'married' and 'cohabiting' couples. Cohabiting unions were identified differently in the three censuses. The Brazilian census had a direct question on union status that combined with the question on marital status allows to differentiate between married and cohabiting couples. In Cuba, the question on marital status included an item for cohabiting unions (*unidos*). In the United States, it was necessary to combine information on the relationship to the householder and on marital status to identify as cohabitors all unmarried co-residing partners. The distinction by type of union is relevant because intermarriage is more common among cohabiting than married couples and because the share of cohabitation among women in union varies considerably in the three countries.

We also control for geography. We identify the state (Brazil and the United States) or province (Cuba) of residence for each couple. Intermarriage research often assumes collapsibility of the marriage market, which implies that the context of opportunities for intermarriage does not vary across areas (Harris and Ono 2005). This is obviously not true because racial composition varies from place to place. The geographic detail available in the three censuses enables us to control for regional differences in racial composition: 27 states in Brazil, 15 provinces in Cuba, and 51 states in the United States. We will not examine racial intermarriage patterns for each of these regions but we will assess the extent to which the tendency to marry within and across racial groups changes when accounting for the racial composition of the regions. In Brazil, for example, the percentage of black women 25-34 ranges from 2.5% in the State of Parana to 61.8% in Bahia. In the United Sates, the District of Columbia and Mississippi had higher percentages of black women (37.3 and 24.9% respectively) in 2001 compared to much lower figures in Vermont and Montana (less than 1%). In Cuba, the percentage of black women ranges from 2.6% in the province of Granma to 13.4% in Santiago de Cuba.

We used log-linear modeling to examine the degree of association between racial groups net of the structural constraints. Log-linear analysis examines the relationship between more than two categorical variables. In our case these variables are race, educational attainment, state or province of residence, and type of union. Further details about the models will be given together with the presentation of the results.

3. Descriptive findings

Table 1 provides information on the distribution of women in unions aged 25-34 by race, educational attainment, and country. We do not report results for men because they are very similar to those of women. The last column of Table 1 shows the racial composition of women 25-34 in union in Brazil, Cuba, and the United States. White women in Brazil account for 55.9% of the population while mixed and black women account for 37.4% and 5.4%, respectively. In Cuba, white women represent 67.6%, mixed women 25.1%, and black women 7.4% of the population. In the United States, 69.2% of women identified as white and 7.6% as black. In all three countries, white women thus represent more than 50% of the population and black women represent less than 10%. Mixed race women account for one-third of the population in Brazil and

one-fourth in Cuba. In the United Sates, the 'other' category accounts for one-fourth of the population, which is mostly Hispanic and Asian but which we do not analyze.

There are racial gaps in educational attainment in the three countries. The percentage of white women in Brazil with higher education (12.3%) is 4.5 times higher than of black women (2.7%) and 4 times higher than of mixed-race women (3.1%). The racial gap in educational attainment in Cuba is much lower than in Brazil and the United States. The share of Cuban women with higher education is similar for the three groups: 13.2% for whites, 11.1% for blacks and 8.9% for the mixed-race. In the United States, 43.2% of white women have completed college education compared to only 27.8% of black women.

Table 2 displays the percentage of racial endogamous unions by women's race and educational attainment. Racial endogamy refers to unions between persons of the same race. Table 1 does not distinguish between married and unmarried couples. Endogamy represents 68.3% of all couples in Brazil, 74.9% in Cuba, and 90.4% in the United States. In all countries, white women show the highest shares of endogamous unions: 73.3% of white women in Brazil are married (or cohabiting) to white men compared to 84.7% in Cuba and 93.8% in the United States. The percentage of black and mixed women in Brazil and Cuba married to men of the same race is lower than for whites: 45.5% of black women in Brazil are married to black men and 65.2% of mixed women are married to mixed men. In Cuba, the percentage of black and mixed women married to a man of the same race is 52.9% and 54.8% respectively. Contrary to the situation in Cuba and Brazil, black women in the United States are overwhelmingly married to black men (93.8%), at a level similar to that observed for white women.

Racial endogamy varies by level of educational attainment. Brazilian and Cuban women show steeper educational gradients than women in the United States. Racial endogamy increases with education for white women and decreases for mixed-race women in Brazil and Cuba. The educational gradient in racial endogamy for black women is different between the two Latin American countries: it decreases in Brazil and increases in Cuba. Table 2 shows that 47.6% of black Brazilian women with low education are in endogamous unions compared to 44.0% of high educated black women. In Cuba, educational differences for black women are great with 43.8% of the low educated and 58.7% of the high educated in endogamous unions. Racial endogamy in the United States for whites and blacks shows almost non-negligible differences by level of education.

Table 3 shows the relative distribution of unions cross-classified by the race of the spouses. Even though the represented frequencies are greatly constrained by the racial composition of the population in each country, they provide clues to the intermarriage patterns. White-white couples represent 41.0% of all couples in Brazil, 57.2% in Cuba, and 64.9% in the United Sates. If couples were distributed at random under the same racial composition, the expected share of white-white unions would have been 29.9% in Brazil, 45.2% in Cuba, and 45% in the United Sates (figures computed from the marginals shown in Table 3). The observed figures are 36% in Brazil, 26% in Cuba, and 45% in the United States, greater than the expected. The cells in Table 3 that are located off the diagonal represent the intermarried couples. They account for 31.8% of couples in Brazil, 25.1% in Cuba and only 1.2% in the United Sates if the other category is excluded. The most frequent type of intermarried couples is between white and mixed, which basically reflects the size of these groups in the total population. Table 3 allows for examining gender differences. For instance, the percent of couples involving white women and black men in the United States is three times larger than the percent of couples involving black women and white men (0.9% versus 0.3%). In the next section, we turn to log-linear models to measure the interaction between racial groups net of the constraints of the racial composition of the population in unions and other controls.

4. Log-linear models

Table 4 shows the model specification and goodness of fit statistics for 5 models of racial intermarriage. To assess fit, we use the *Likelihood Ratio Chi-squared statistic* (L^2) and the *Bayesian Information Criterion (BIC)*, which is based on the L^2 statistic (Raftery 1986). *BIC* introduces a penalty term for the number of parameters in a model. Thus, it is possible to improve the fit of a model by adding more parameters, but if this adds unnecessary complexity, *BIC* will indicate a poorer fit. Each country is analyzed separately. For the sake of comparability, the same set of models has been implemented. We have designed general models with simple interactions to address the main research questions raised in this study. We have avoided more complex interactions in the interest of comparability. The input data for all these models consists of a multidimensional contingency table where couples are cross-classified according to the race and educational attainment of the spouses, type of union and geography.

The number of cells in these contingency tables varies across countries because the number of racial categories and regions in each country is different.

Log-linear models predict the number of couples in each cell based on a set of specifications or rules defined by the researcher. The expected number of couples in each cell is the result of combining different order parameters: main effects and interaction effects. Main effects account for the marginal distribution of the contingency table, that is the size of the racial, educational, type of union and geography groups. If the vast majority of the population is white, we can expect that a large proportion of unions will involve a white person. Interaction effects provide information about the degree of association between groups controlling by the size of the groups. Table 4 shows the interaction effects for white-white, black-black and mixed-mixed unions in the final three columns. Results for the 'other' category are neither presented nor discussed in the paper although they were included in the analyses. Interaction effects are expressed as odds ratios. Values above 1 indicate a positive association between groups, which means that there are more couples of a particular combination of races than one would have expected given the size of each group. For endogamous unions, the higher the value, the higher the tendency to marry or cohabit endogamously. For instance, a value of 2 for white racial endogamy indicates that unions in which both partners are whites are twice as likely to occur as any other type of union in which whites are involved.

Model 1 (M1) examines the odds of endogamous unions between racial groups at the country level without controls. This model assumes collapsibility of the marriage market (i.e. assumption of a single, national marriage market) (Harris and Ono 2005). Model 1 shows that white, mixed, and black persons have a tendency to marry between themselves. In all countries, odds ratios are well above 1. On average, racial endogamy is greater in the US compared to Cuba and Brazil. Brazil shows the lowest levels of endogamy. White-white couples in Brazil are 2.79 times more likely to occur than any other type of couples involving whites. Mixed and white people in Brazil share similar levels of endogamy. Black-black couples have the highest odds ratio in Brazil at 4.81, 70% higher than the odds for whites and mixed race individuals. The Cuban pattern of racial endogamy is different than in Brazil: high levels of endogamy for whites and blacks (3.57 and 3.30 respectively) and low levels for mixed race individuals (1.71). The highest levels of endogamy are found in the United States: 6.7 among whites and 16.0 among blacks. Endogamy for whites in the United States is 2.7 and 1.9 times higher than in Brazil and

Cuba respectively. Black endogamy is in the United States 3.3 and 4.8 times higher than among blacks in Brazil and Cuba. Of all racial groups, mixed race people in Cuba are the least likely to marry within their group.

Models 2 and 5 (M2) to (M5) yield essentially the same pattern of racial endogamy as Model 1. Despite controls, the United States continued to be the most racially endogamic country.

Model 2 breaks the collapsibility assumption and measures racial endogamy controlling for the racial composition of each state or province. Thus, changes from Model 1 to 2 in the odds of endogamy can be directly attributed to the role of geography. Model 2 yields lower levels of racial endogamy than Model 1 in all three countries. For instance, white endogamy has declined from 2.79 to 2.44 in Brazil, from 3.57 to 3.16 in Cuba, and from 6.73 to 6.34 in the United States. On average, this represents a 10% decrease in Brazil and Cuba and a 7% decrease in the United Sates.

Model 3 (M3) controls for type of union and adds an interaction between type of union and racial endogamy. The model produces two sets of endogamy parameters, one for married unions and the other for unmarried ones. Married couples are more endogamous than unmarried ones. On average, racial endogamy among married couples is 20% greater than among cohabiting couples in Brazil, 23% greater in Cuba, and 36% greater in the United States.

Model 4 (M4) controls for the educational attainment of the spouses and for the interaction between the educational attainment of the spouses[3]. The goodness of fit statistics of Model 4 improve dramatically both in terms of L^2 and BIC compared to any of the previous models. Such an improvement indicates that education is a strong structuring dimension of the marriage market: people tend to marry people with similar levels of education. However, racial endogamy has hardly changed between Models 2 and 4. These results suggest that education and race are to a certain extent independent dimensions of the marriage market. Compared to Model 2, racial endogamy in Model 4 after controlling for education has decreased by only 3.1% in Brazil, 0.7% in Cuba, and 0.8% in the United States.

[3] The interaction between type of union and race has not been included to avoid presenting a set of results for married couples and one for cohabiting ones. Differences by type of union remain constant even controlling for education (results available from the authors).

In Figure 1, we graphically represent the odd ratios for endogamous unions by race and country. The United States has the highest levels of racial endogamy, particularly for blacks. Endogamy levels in Brazil and Cuba are substantially lower than in the United States. Racial endogamy in Brazil increases as skin color darkens. Cuba, instead, shows similar levels of endogamy for whites and blacks and low levels for mixed. We return to Model 5 (M5) after the presentation of Figure 2 and 3.

In contrast to the data for endogamy presented so far, Figure 2 shows the odds of white and black intermarriage in Brazil, Cuba, and the United States, produced by Model 4. The odds ratios for intermarried couples are all below 1 because racial endogamy is the norm in the three countries. This, however, does not mean that we cannot draw relevant conclusions from these parameters. Whites and blacks in the United States are the least likely to intermarry among the three countries. Black and white Brazilians are three times as likely to marry as in the United States. Cuba is intermediate, with blacks and whites twice as likely to marry as in the United States. Gender differences are not large. In Brazil and Cuba, unions between black women and white men are more common than between white women and black men. In the United States, the opposite is true.

Figure 3 shows the odds of intermarriage between mixed race men and women with blacks and whites in Brazil and Cuba. In Brazil, the mixed population is more likely to marry with whites than with blacks. In Cuba, marriages between mixed and white persons occur at the same level as those between mixed and black.

Model 5 in Table 1 includes an interaction between racial endogamy and educational attainment. This model enables us to explore the extent to which racial endogamy varies by educational attainment. The results are shown in Figures 4 and 5. Figure 4 (first panel) shows the level of white endogamy by sex and educational attainment in Brazil, Cuba, and the United States. In Brazil, there is only a slight educational gradient for whites, although the level of endogamy is quite similar across all educational groups. In Cuba, white endogamy clearly increases with education. White Cuban men and women with high education are more likely to marry other whites that men and women with progressively lower levels of education. The odds ratios for marriage with other whites among white Cuban women of the highest education are 48% higher than among women with the lowest education. As in Cuba, racial endogamy in the United States changes by level of education but the gradient is for the most part, negative. As

education increases, the tendency to marry other whites decreases, particularly among men, except among those that completed college.

Figure 4 (second panel) shows the odds of racial endogamy by educational attainment and sex for mixed race populations in Brazil and Cuba. Mixed race populations have lower rates of endogamy than blacks and whites in both countries and show no variation by educational attainment. Finally, Figure 4 (third panel) shows black endogamy levels by educational attainment and sex in Brazil, Cuba and the United States. Here, educational is relevant in all countries. Greater education is positively correlated with the odds of black intermarriage in Brazil and in Cuba. Black and High educated men and women are more likely to marry other blacks than Low educated black men and women, in Latin American countries. In the United States, the tendency for blacks to marry among themselves decreases with education except for the most educated. College educated Afro-American men and women have higher odds of marrying other blacks than those with some college.

Figure 5 shows the odds ratios for racial intermarriage between whites and blacks by educational attainment and sex. Figure 5 (first panel) takes the perspective of the white partner and Figure 5 (second panel) is from the perspective of the black partner. From the white partner's perspective –both male and female, the odds ratios for white and black intermarriage decreases with educational attainment in both Brazil and Cuba. However, it shows almost no variation in the United States. From the black partner perspective, black men and women in Brazil and Cuba are less likely to marry whites as their education increases, while there is virtually no educational gradient for (North) Americans black men and women but it is slightly negative for black women and slightly positive for black men.

5. Conclusion and Discussion

The United States has been the focus of the vast majority of studies of black-white intermarriage. In this article, we have sought to decenter the study of interracial marriage away from the United States by directly comparing it with the cases of Brazil and Cuba, where histories of slavery involving Africans has been more prominent than in the United States, In both Latin American countries, the black population is proportionately larger (and numerically larger for Brazil). Notably, narratives of mestizaje or race mixture since slavery have dominated thinking about race relations in those two Latin American countries and thus we expected

substantially more intermarriage there than in the United States. Certainly, mestizaje is greatly exaggerated but there is some evidence on a descriptive level, that it has been greater in Brazil than in the United States (Pierson 1967, Telles 2004).We were clearly expecting the two Latin American nations to have more racial intermarriage than the United States but once the relevant variables were adjusted, it was not clear how much.

Using the same analytical strategy to examine the three countries with newly released IPUMS-I census microdata from the 2000 round of censuses, we find markedly different intermarriage levels and patterns among the three countries. Our findings confirm that racial boundaries are particularly rigid in the United States compared to Cuba and Brazil. However, we also found substantial Cuba-Brazil differences, where Cuban levels of intermarriage are intermediate to those in Brazil and the United States. Even though Brazil and Cuba are considered prime examples of countries with strong ideologies of race mixture, intermarriage in Cuba is only twice as high as in the United States, while Brazilian intermarriage is fully three times as great.

This is the first study to provide any kind of recent and representative evidence on intermarriage for Cuba. Levels of endogamy in Cuba were previously unknown and hard to hypothesize based on the very limited hard evidence we could gather from this country. However, given the *mestizaje* narratives of Cuba (de la Fuente 2000, Sawyer 2006, Fernandez 2010), the drastic reduction of racial socioeconomic gaps and the official claim of the Castro government since the 1960s that racism had been overcome on that island nation, we expected intermarriage to be at least as high as Brazil - and probably higher-, though there is a general expectation that results for Brazil and other Latin American countries should be similar.

Our results for Cuba also show that white endogamy is greater than in Brazil while black endogamy is lower. We examined the mixed-race population separately for Brazil and Cuba, where that population is separately classified and large. Since the early twentieth century, there has been no comparable category for the United States and thus modern studies of racial intermarriage have not examined this category. We found that the mixed-race population in Cuba has lower levels of endogamy than in Brazil and there is no clear preference for marrying whites or blacks. This compares to Brazil, where the mixed-race population is more likely to marry whites.

Racial intermarriage patterns persist at all educational levels, type of unions, and state/province of residence. Controls for the unequal distribution of racial groups across regions, for differences between married and cohabiting unions, and for the educational distribution of racial groups hardly affected rates of intermarriage in any country. Married couples are more racially endogamous than cohabiting couples and educational differences across racial groups reduce at most 2% the odds ratio of racial endogamy compared to models that not take into account the educational attainment of the spouses. Surprisingly, even in a country like Cuba, where controls for educational attainment would have been less needed than in Brazil and the United States because there are hardly any racial gaps in educational attainment among young generations, there is a strong tendency to marry within racial groups.

Finally, patterns along the educational gradient are striking. In the United States, we found no educational gradient from the white perspective, a positive gradient for black men and a negative one for black women. This is not surprising, as it supports previous literature (xxx). However, these gradients are slight compared to those we found for Brazil and Cuba. In both Latin American countries, the educational gradient is negative and relatively steep from all race and gender perspectives. In other words, unlike the United States, intermarriage notably increases among persons with progressively lower education. Thus, ongoing mestizaje in these two Latin American nations, where it occurs, is primarily among persons of low socio-economic status. In sum, racial boundaries are relatively rigid in the US and least rigid in Brazil with Cuba intermediate but racial intermarriage is concentrated among the low status sectors of Brazil and Cuba whereas there is no clear status pattern for the United States.

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Table 1. Educational attainment by race. Women in union 25-34. Brazil 2000, Cuba 2002, and United States 2000.

Brazil 2000	Low (0-3)	Mediu-Low (4-7)	Medium-High (8-11)	High (12+)	Total	N	%
White	13.3%	33.5%	40.9%	12.3%	100%	315,340	55.9%
Mixed-race	27.1%	38.1%	31.7%	3.1%	100%	210,944	37.4%
Black	29.7%	37.9%	29.6%	2.7%	100%	30,626	5.4%
Other	28.7%	27.7%	31.2%	12.4%	100%	7,376	1.3%
Total	19.6%	35.4%	36.7%	8.3%	100%	564,286	100%
Cuba 2002	**Low (Primary)**	**Mediu Low (Lower secondary)**	**Mediu-High (Secondary completed)**	**High (College completed)**	**Total**	**N**	**%**
White	12.2%	31.4%	43.3%	13.2%	100%	41,050	67.6%
Mixed-race	14.5%	35.4%	41.2%	8.9%	100%	15,220	25.1%
Black	9.0%	33.4%	46.5%	11.1%	100%	4,488	7.4%
Total	12.5%	32.5%	43.0%	12.0%	100%	60,758	100%
United States 2000	**Low (No high school diploma)**	**Mediu-Low (High school diploma)**	**Medium-High (Some college)**	**High (College completed)**	**Total**	**N**	**%**
Non-hispanic white	7.1%	24.7%	24.9%	43.2%	100%	425,121	69.2%
Non-hispanic black	12.4%	28.4%	31.1%	28.2%	100%	46,624	7.6%
Other	31.6%	22.0%	18.5%	27.8%	100%	142,857	23.2%
Total	13.2%	24.4%	23.9%	38.5%	100%	614,602	100%

Source: Own calculations based on census microdata, IPUMS

Table 2. Percentage of endogamous unions by race and educational attainment. Women in union 25-34. Brazil 2000, Cuba 2002, and United States 2000.

Brazil 2000	Low	Medium-Low	Medium-High	High	Total
White	60.0%	70.0%	75.9%	88.1%	73.3%
Mixed-race	71.8%	65.7%	60.2%	50.7%	65.2%
Black	47.6%	45.4%	43.8%	44.0%	45.5%
Other	54.0%	32.3%	32.5%	46.3%	40.3%
Total	65.0%	66.5%	69.0%	81.2%	68.3%
Cuba 2002	Low	Medium-Low	Medium-High	High	Total
White	81.4%	82.7%	85.8%	89.2%	84.7%
Mixed-race	58.4%	54.2%	54.4%	53.4%	54.8%
Black	43.8%	49.0%	56.1%	58.7%	52.9%
Total	72.7%	72.4%	75.9%	80.5%	74.9%
United States 2000	Low	Medium-Low	Medium-High	High	Total
Non-hispanic white	91.6%	93.8%	92.9%	94.6%	93.8%
Non-hispanic black	95.2%	95.1%	93.5%	92.3%	93.8%
Other	94.2%	80.0%	68.9%	69.0%	79.4%
Total	93.3%	91.0%	88.6%	90.2%	90.4%

Source: Own calculations based on census microdata, IPUMS

Table 3. Distribution of unions by race of the partners. Women in union 25-34. Brazil 2000, Cuba 2002, and the United States 2000.

Women's race	Men's race				
Brazil 2000	White	Mixed	Black	Other	Total
White	41.0	12.4	2.0	0.5	55.9
Mixed	10.7	24.4	2.1	0.3	37.4
Black	1.6	1.3	2.5	0.1	5.4
Other	0.4	0.3	0.1	0.5	1.3
Total	53.6	38.4	6.7	1.3	100%
Cuba 2002					
White	57.2	8.5	1.8	-	67.5
Mixed	8.2	13.8	3.1	-	25.1
Black	1.5	2.0	3.9	-	7.4
Other	-	-	-	-	-
Total	67.0	24.2	8.8	-	100%
United States 2000					
White	64.9	-	0.9	3.5	69.2
Mixed	-	-	-	-	-
Black	0.3	-	7.1	0.2	7.6
Other	4.2	-	0.5	18.5	23.2
Total	65.1	-	8.5	22.1	100%

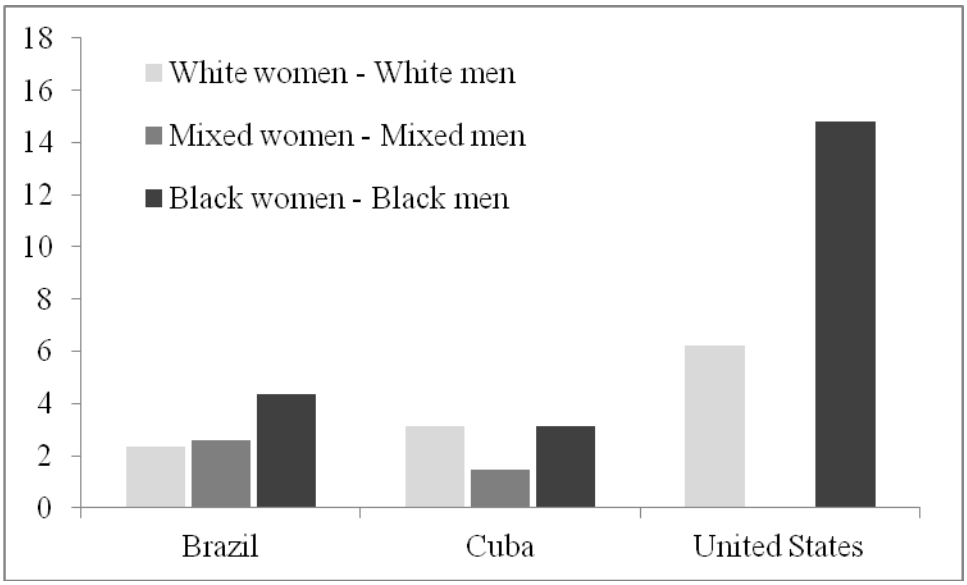
Source: Own calculations based on census microdata, IPUMS

Table 4. Log-linear models for racial assortative mating for married and cohabiting unions (Women 25-34). Brazil 2000, Cuba 2002, and the United States 2000

Model	Decription	L^2	*BIC*	Odds for endogamous unions: Both white	Both mixed	Both black
Brazil 2000						
M1.	Racial endogamy	3971318,7	1279011,7	2,79	2,85	4,81
M2.	M1 + Geography	923559,9	561656,3	2,44	2,62	4,50
M3.	M2 + Type of union	741775,0	484110,9	2,39	2,61	4,42
M4.	M2 + Type of union + Racial endogamy by type of union	738175,9	482624,9			
	Married			2,10	2,46	3,59
	Cohabiting			2,58	2,74	5,40
M5.	M3 + Educational Homogamy	29905,6	-134205,4	2,33	2,57	4,35
M6.	M5 + Racial endogamy by educational attainment	24084,9	-139381,8	*see Figure 1*		
Cuba 2002						
M1.	Racial endogamy	163188,2	52083,3	3,57	1,71	3,30
M2.	M1 + Geography	84796,6	23127,3	3,16	1,46	3,14
M3.	M2 + Type of union	74388,2	18618,9	3,13	1,45	3,14
M4.	M3 + Racial endogamy by type of union	73483,5	18304,5			
	Married			2,62	1,42	2,73
	Cohabiting			4,02	1,52	3,78
M5.	M3 + Educational Homogamy	5782,7	-34324,7	3,12	1,4	3,14
M6.	M5 + Racial endogamy by educational attainment	5035,1	-34643,1	*see Figure 1*		
United States 2000						
M1.	Racial endogamy	6039363,6	1454922,3	6,73	-	16,02
M2.	M1 + Geography	1572744,0	761265,7	6,34	-	14,81
M3.	M2 + Type of union	766299,2	361849,5	6,39	-	14,96
M4.	M3 + Racial endogamy by type of union	757270,2	360328,3			
	Married			4,65	-	9,68
	Cohabiting			6,78	-	16,45
M5.	M3 + Educational Homogamy	40625,1	-131709,7	6,23	-	14,83
M6.	M5 + Racial endogamy by educational attainment	34342,8	-138670,5	*see Figure 1*		

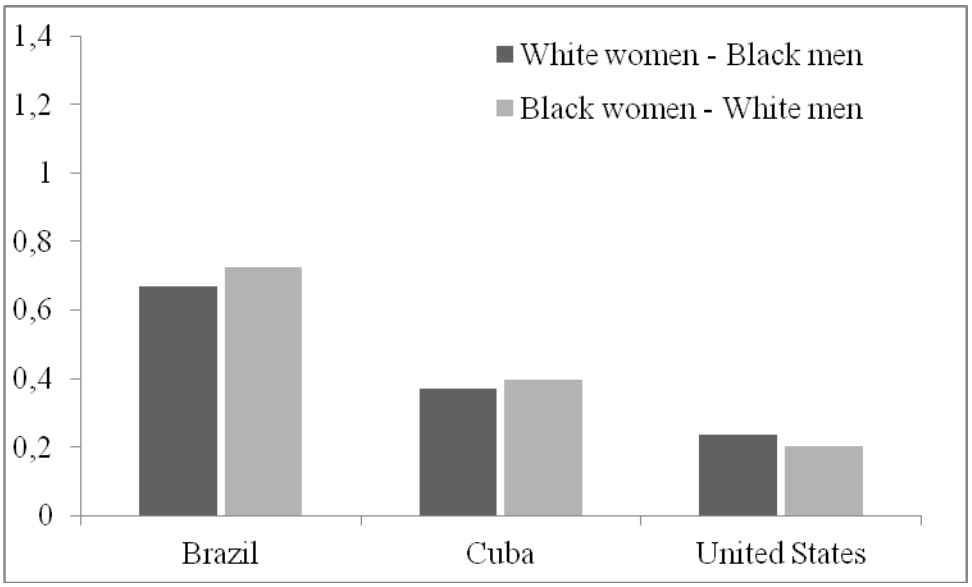
Source: Own calculations based on census microdata, IPUMS.

Figure 1. Odds for racially endogamous unions by country. Brazil 2000, Cuba 2002, and the United States 2000 (Model 4)



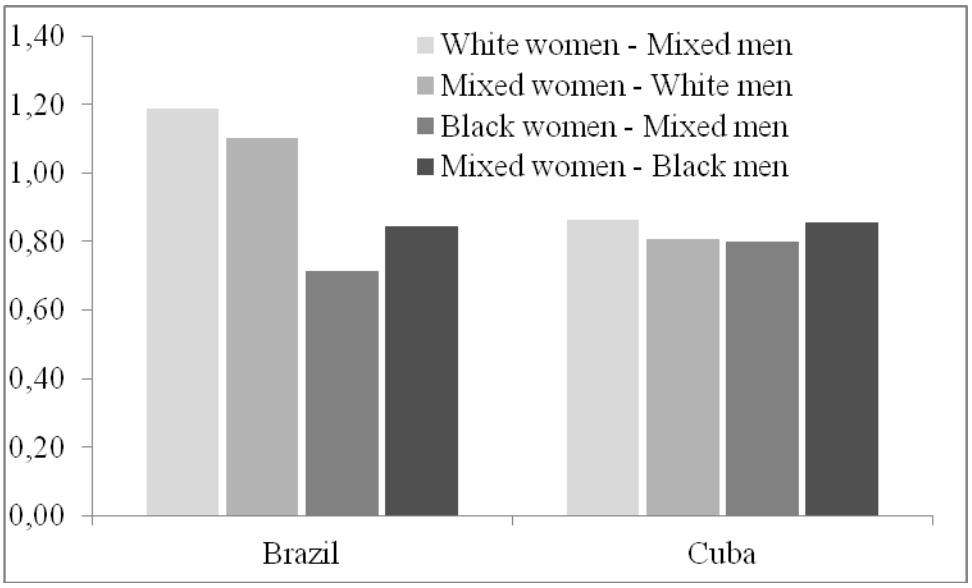
Source: Own calculations based on census microdata, IPUMS.

Figure 2. Odds for white-black interracial unions by country. Brazil 2000, Cuba 2002, and the United States 2000 (Model 4)



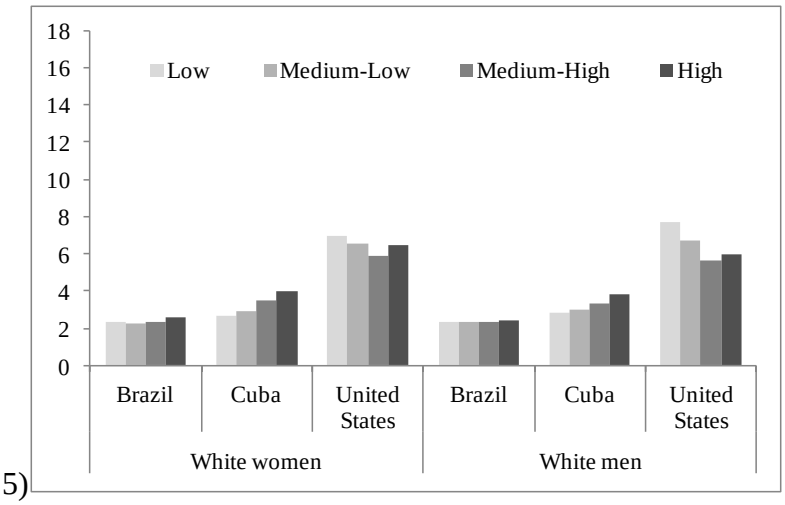
Source: Own calculations based on census microdata, IPUMS.

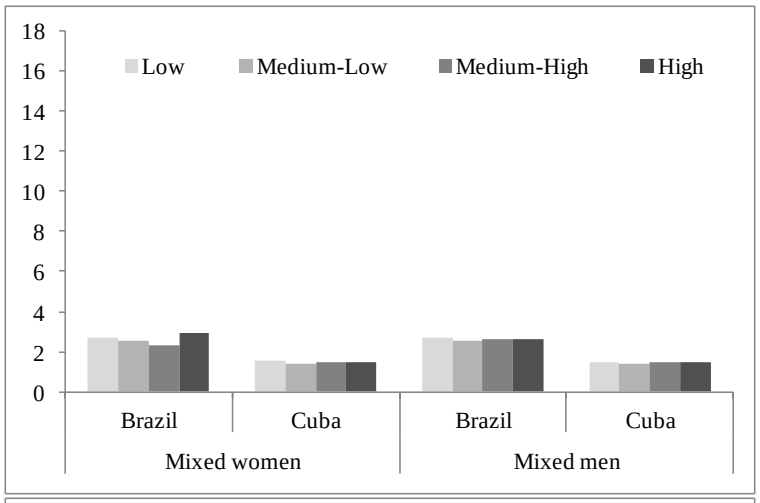
Figure 3. Odds for white – mixed and mixed – black interracial unions by country. Brazil 2000, and Cuba 2002 (Model 4)

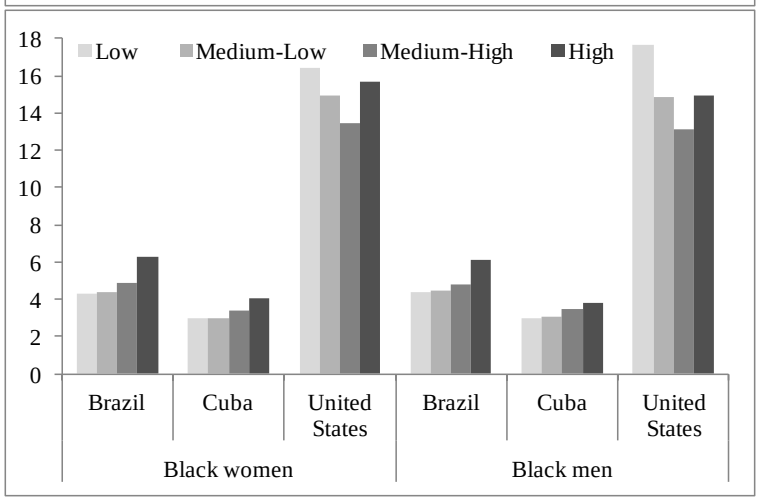


Source: Own calculations based on census microdata, IPUMS.

Figure 4. Odds ratio for white/mixed/black endogamous unions by educational attainment, sex and country. Brazil 2000, Cuba 2002, and the United States 2000 (Model 5)

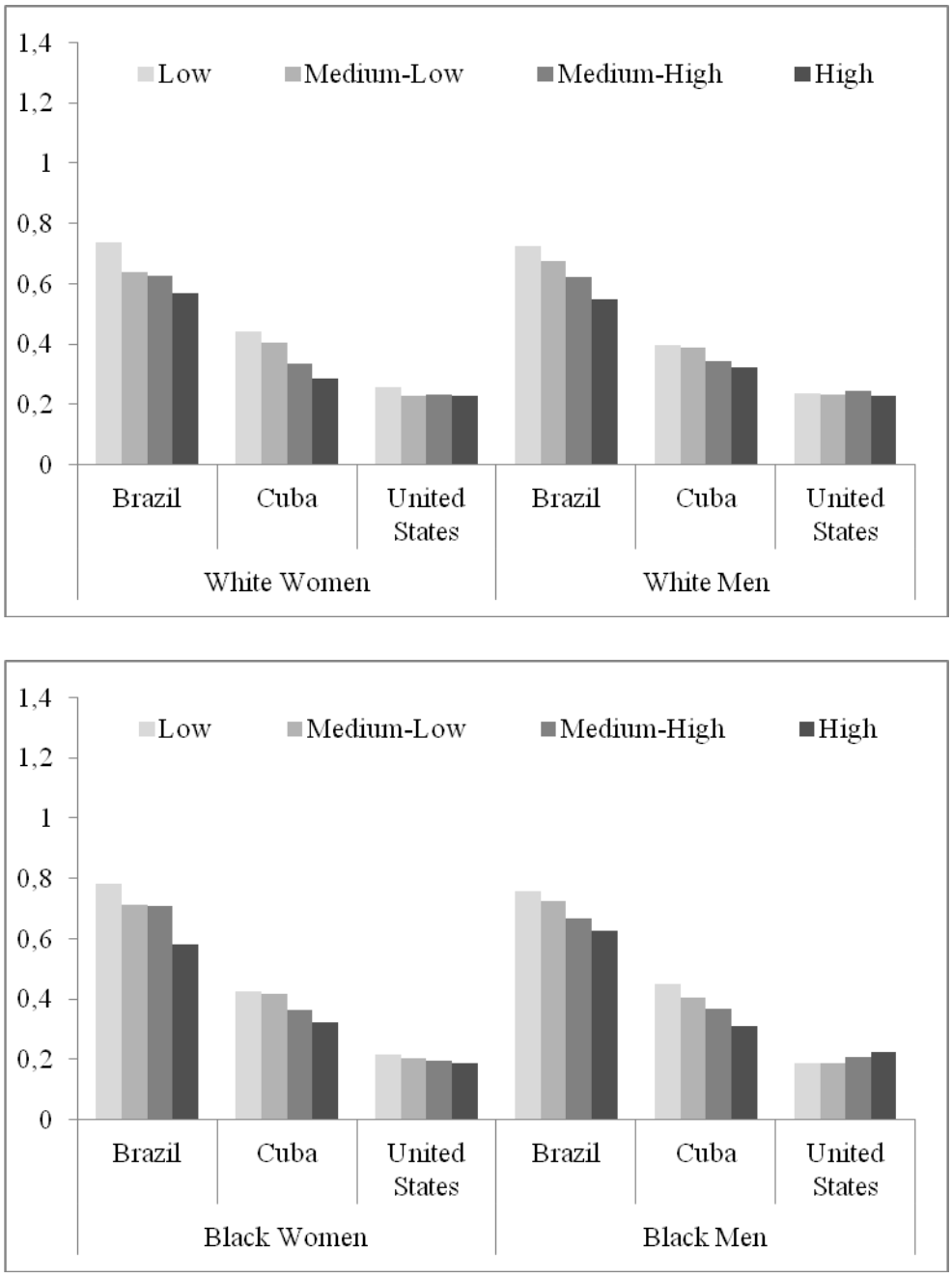






Source: Own calculations based on census microdata, IPUMS.

Figure 5. Odds ratio for white-black intermarriage by educational attainment and sex of the white / black partner. Brazil 2000, Cuba 2002, and the United States 2000 (Model 5)



Source: Own calculations based on census microdata, IPUMS.