Published in final edited form as:

Am Sociol Rev. 2014 August 1; 79(4): 775–806. doi:10.1177/0003122414541960.

Ethnic Identification and its Consequences for Measuring Inequality in Mexico

Andrés Villarreal*

University of Maryland, College Park

Abstract

This paper examines ethnic boundary crossing and its impact on estimates of ethnic disparities in children's outcomes in the specific context of Mexico, a country with the largest indigenous population in the Western hemisphere. The boundary that separates the indigenous and non-indigenous population is known to be extremely fluid as it is based on characteristics that can easily change within a generation such as language use, cultural practices and a subjective sense of belonging. Using data from the Mexican census I examine the ethnic classification of children of indigenous parents. I find that movement across the ethnic boundary depends on which of the two criteria currently recognized by the Mexican census is used. Children of indigenous parents are much less likely to be classified as indigenous according to language proficiency, especially when their parents have higher levels of education. By contrast, when proxy self-identification is used as a criterion, children of indigenous parents are more likely to be classified as indigenous, and greater parental education actually results in *higher* odds that children will be classified as indigenous. The shift in children's indigenous classification with parental education is found to strongly affect estimates of educational disparities between indigenous and non-indigenous children.

Keywords

Ethnicity; Mexico; Inequalities; Education; Multiculturalism

Research on racial and ethnic stratification often involves the comparison of socioeconomic outcomes across two or more demographic groups. Statistical models are frequently used, for example, to examine the differences in educational attainment, occupational status and income between individuals in different racial and ethnic categories, and to apportion the differences into various explanatory factors (e.g., Jencks and Phillips 1998; Grodsky and Pager 2001; Western and Pettit 2005; Semyonov and Lewin-Epstein 2009). In such studies the racial and ethnic categories into which individuals are classified are assumed to be relatively well-defined and stable over time. Yet researchers have shown that the social boundaries that define many racial and ethnic categories can change, and that individuals often engage in purposeful behavior to move between categories (Alba and Nee 2003; Alba 2005; Loveman and Muniz 2007; Wimmer 2008a, 2008b; Montgomery 2011). Such

¹Direct correspondence to Andrés Villarreal, Department of Sociology, 2112 Art-Sociology Building, University of Maryland, College Park, MD 20742 (avilla@umd.edu).

movement complicates the analysis of social disparities, particularly if the odds of crossing the racial and ethnic boundaries are systematically related to the outcomes being measured. For example, if individuals who attain higher levels of education are thereby more likely to be classified in the least disadvantaged racial or ethnic category, then our estimates of racial and ethnic disparities in education will be misleading.

This study examines ethnic boundary crossing and its impact on estimates of educational disparities in the specific context of Mexico, a country with the largest indigenous population in the Western hemisphere (Layton and Patrinos 2006). Because of the ambiguity in racial and ethnic classification in Latin America, the region provides an important setting in which to study social boundaries. However, sociological research on boundary crossing has focused mostly on Afro-Latin American countries such as Brazil. Racial classification in these countries is indeed remarkably fluid due in large part to the fact that individuals are classified based on perceptions of their physical appearance, and in particular their skin color (Skidmore 1972, 1995; Telles and Lim 1998; Rodríguez 2000; Duany 2002; Telles 2004; Gravlee 2005; Bailey 2009). Perceptions of skin color are inherently subjective and are often influenced by other factors, including individuals' socioeconomic status. Brazilians with higher levels of education and income tend to be considered whiter, as captured by the saying that "money whitens" (Telles 2002, 2004). A similar pattern is found across generations: Brazilian children of higher socioeconomic status parents are significantly more likely to be classified in whiter categories (Schwartzman 2007; Francis and Tannuri-Pianto 2013). This systematic whitening of higher status individuals presents a serious problem for the study of racial stratification. In the extreme, the whitening of Brazilians with higher income or educational attainment may imply the reverse causal ordering between skin color and socioeconomic status, namely that an individual's status determines his or her racial classification, and at the very least it may lead to a biased estimation of the effect of skin color on socioeconomic outcomes.

In contrast to Afro-Latin American countries such as Brazil, in Indo-Latin American countries, which include not only Mexico but most countries in Central America and the Andean region, the primary socially-recognized ethnic distinction between the indigenous and non-indigenous population is not based on phenotypical differences. The social boundary that separates the indigenous population is instead constructed around other criteria such as cultural practices, language use, and a subjective sense of belonging (Harris 1964; Pitt-Rivers 1968; Bartolomé 1997). Such criteria are used to distinguish what are often referred to as ethnic groups rather than racial categories, although some scholars prefer not to separate these two concepts (e.g., Loveman 1999; Wimmer 2008a). Ethnographic and historical studies in Mexico, for example, have shown that phenotype is not an important criterion for indigenous identification (Mörner 1967; Pitt-Rivers 1968; Friedlander 1975; Knight 1990). However, just as with skin color classification in Afro-Latin American countries, movement across the social boundary separating indigenous and non-indigenous peoples is quite common, and may in turn affect our estimates of social disparities. Yet we do not know the extent to which such movement is affected by socioeconomic status.

Whether individuals are more or less likely to shift their ethnic identification than their racial identification with increasing socioeconomic status is difficult to predict. On the one

hand, we might expect ethnic boundaries to be even more fluid and amenable to change with upward social mobility insofar as they are less influenced by phenotypical differences. As some researchers have noted, there are limits to the racial whitening process based on physical appearance in countries like Brazil (Wade 1993; Telles 2004:95–98). On the other hand, individuals may be less likely to shed their identification with a close-knit ethnic group with which they share a strong sense of belonging, the same language and customs even when they have attained a higher socioeconomic status. Following the distinction made by Brubaker (2004), skin color categories may often be described as cases of “ethnicity without groups”, while the indigenous category in Mexico and many other Latin American countries frequently involves actual groups.

The ambiguity in ethnic classification in Indo-Latin American countries such as Mexico has led to a longstanding debate regarding the most appropriate way to identify the indigenous population in national censuses and other official statistical sources (Valdés 1995, 2003; Serrano Carreto 2005; Friedlander 2006:207–208; Hernández Bringas 2007). Until recently, the only system of classification used by the Mexican census was based on individuals’ proficiency in an indigenous language. A person was considered indigenous only if he or she spoke one of the country’s many indigenous languages. Following critics who charged that language proficiency was an overly restrictive and externally-imposed criterion for indigenous identification (e.g., Bonfil Batalla 1996 [1987]; Bartolomé and Barabas 1996), in 2000 the Mexican census began allowing census respondents to simply choose their own ethnicity and report that of other members of the household, including their children. This method of ethnic classification based on proxy self-identification is consistent with current practices by the U.S. census, and with the spirit of international legislation that considers indigenous people’s ability to identify their own ethnicity as a fundamental right (ILO 1989). Yet we do not know how the use of this new criterion affects the rate at which children will retain the indigenous classification of their parents, or estimates of the disadvantage faced by indigenous peoples.

In the analysis below I use data from the 2010 Mexican census to examine the ethnic classification of children of indigenous parents. I specifically compare how parental education affects how children are identified under the two systems of classification—language proficiency and proxy self-identification. I also consider whether the Mexican government’s recent support for multiculturalism, and in particular its policies intended to promote indigenous language education, encourage the indigenous classification of school-age children. Finally, I assess the impact that the shift in indigenous identification with greater parental education has on estimates of the educational disadvantage of indigenous children according to both classification systems.

Ethnic Boundaries in Mexico

Researchers interested in understanding how ethnic and racial categories are socially constructed have frequently used the concept of boundaries (Barth 1969; Tilly 1998, 2005; Lamont 2000; Lamont and Molnár 2002; Alba and Nee 2003; Lee and Bean 2004; Loveman and Muniz 2007; Wimmer 2008a). A social boundary may be broadly defined as any categorical distinction recognized by members of a society that affect their attitudes and

behavior towards others (Alba and Nee 2003:59; Wimmer 2008a:975). Social boundaries are not fixed over time. Numerous studies have shown how racial and ethnic boundaries emerge, and are defended or transformed by social actors (Horowitz 1985; Tilly 1998; Zolberg and Woon 1999; Brubaker 2004; Wimmer 2008a). Ethnic and racial boundaries also vary greatly in the extent to which they clearly demarcate categories of individuals. Some boundaries are unambiguous, such that everyone knows on which side of the boundary they are located. Alba (2005) refers to these as “bright” boundaries in contrast to “blurred” boundaries which allow for differences in interpretation as well as greater flexibility in individuals’ self-presentation.

Racial categories in Latin America are defined by extremely blurred social boundaries. In Afro-Latin American countries such as Brazil, for example, individuals are classified into multiple categories along a white to black continuum based largely on perceptions of skin color (Nobles 2000; Telles 2004; Daniel 2006; Bailey 2009). Due to the subjective nature of judgments about physical appearance, these racial categories are characterized by a high degree of ambiguity. The same individual may be considered as black in one context and brown (*moreno*) in another. The same holds true across generations: the child of two black parents may be considered brown, and so on. However, movement across racial boundaries based on skin color is not completely random, but instead shows some systematic tendencies. In particular, a higher socioeconomic status leads to a shift towards whiter categories. Using data from national household surveys, for example, Schwartzman (2007) demonstrates that Brazilian children of parents with higher levels of education tend to be classified in whiter categories. Similarly, Francis and Tannuri-Pianto (2013) find that higher family socioeconomic status is associated with lighter racial self-classification among Brazilian college students.

Ethnic categorization in Indo-Latin American countries such as Mexico has been less studied using survey data. However, evidence from ethnographic studies suggests that the boundary between the two principal socially-recognized ethnic categories—indigenous and non-indigenous—is also extremely blurred. As mentioned earlier, the indigenous population is not distinguished based on phenotypical characteristics but rather on language use, cultural practices and a subjective sense of belonging. In their classic study of ethnic relations in Southeastern Mexico, Colby and van den Berghe (1961: 783) describe the ease with which an indigenous person may cross the social boundary and be considered a *ladino*, as non-indigenous residents are called in that region of the country:

“If an Indian acquires a fluent knowledge of Spanish, dresses in ladino clothing, and adopts ladino customs, he can ‘pass’ the ethnic line. During his own lifetime his origins may be remembered and he may still be called an Indian, but he will be treated as a ladino for most everyday purposes. His children will definitely be considered to be ladinos.”

The crossing of the ethnic boundary may therefore involve little else than learning the language and customs of the larger *ladino* (sometimes referred to as *mestizo*) population.

Being considered indigenous has historically been stigmatizing, leading many to consciously distance themselves from the indigenous category if at all possible (Pitt-Rivers 1968;

Friedlander 1975; Bonfil Batalla 1996 [1987]; Nutini 1997). Moreover, because an indigenous identity creates an impediment to entry into the middle and upper classes (Colby and van den Berghe 1961; Pitt-Rivers 1968; Nutini 1997), upwardly mobile individuals may have a particular desire for themselves and their children to be considered as non-indigenous, which would lead to a systematic shift away from the indigenous category with greater parental socioeconomic status. A first hypothesis regarding the association between parental socioeconomic status and children's ethnic identification is therefore that the stigma associated with being considered indigenous will lead indigenous parents with higher socioeconomic status to avoid classifying their children as indigenous. In the analysis below I will test this *stigmatization hypothesis* against competing explanations.

The Mexican State's New Multicultural Agenda and its Consequences for Indigenous Identification

For much of the twentieth century the Mexican government's official policy towards indigenous peoples was aimed at incorporating them into the nation through a process of assimilation into the larger *mestizo* culture (Bonfil Batalla 1996 [1987]; Brading 1988; Knight 1990; Díaz Polanco 1991; Doremus 2001; Stavenhagen 2002; de la Peña 2005). While Mexico's indigenous heritage was glorified in a movement known as *Indigenismo*, contemporary indigenous culture was seen as backward and inconsistent with a project of modernization and national unification. Educational policy during this time was explicitly focused on the castilianization (*castellanización*) of the indigenous population, or its conversion to the Spanish language (Stavenhagen 2002; de la Peña 2002; Terborg, García Landa and Moore 2008; Tinajero and Englander 2011). Critics of government-sponsored education programs and other economic assistance programs geared towards indigenous groups, charged that they were motivated by a homogenizing agenda that suppressed alternative cultural identities (Warman et al. 1970; Bonfil Batalla 1996 [1987]). Some authors in fact argued that the policies amounted to ethnocide, or the purposeful destruction of the cultural legacy of an ethnic group (Bonfil Batalla 1996 [1987]; Bartolomé and Barabas 1996; Stavenhagen 2001).

As a result of political pressure from indigenous movement organizations, prominent intellectuals, and international agencies, the Mexican government's official position began to change in the 1990s. After decades of pursuing assimilationist policies criticized by many for suppressing indigenous identities, Mexican authorities embarked on a new policy course aimed explicitly at protecting and promoting indigenous languages and cultures (de la Peña 2006). The ratification of the International Labour Organization's Indigenous and Tribal Peoples Convention (also known as ILO Convention 169) by the Mexican government in 1990 was particularly instrumental in this policy shift as it legally committed the government to recognizing the country's ethnic diversity and to expanding the rights of indigenous peoples. Article 4 of the Mexican constitution was amended in 1991 proclaiming Mexico to be "a multicultural nation based originally upon its indigenous peoples." The article also required the government to "protect and promote the development of [indigenous] languages, culture, practices, customs, resources and specific forms of social organization." (translation from de la Peña 2006: 287). Further amendments and new laws

followed, including the General Law of Linguistic Rights in 2004. New agencies were created in charge of preserving indigenous cultures and languages, such as the National Commission for the Development of Indigenous Peoples (CDI), and the National Institute of Indigenous Languages (INALI).

Critics charge that the multicultural agenda enacted by governments throughout Latin America including Mexico only includes the protection of a limited set of cultural rights, and leaves existing power relations and socioeconomic disparities unchanged (Hale 2002; Speed 2005). Nevertheless, the Mexican government's embrace of multiculturalism, however circumscribed, and in particular the greater respect for indigenous groups, may have contributed to a sense of ethnic pride and a greater willingness of individuals to identify themselves and their children as indigenous (López Santillán 2011: 174–176). Because individuals with higher levels of education will generally be more exposed to the multicultural message and also be more receptive to it, we may expect a greater retention of the indigenous identity among those that are more educated. A second hypothesis regarding the association between parental socioeconomic status and children's ethnic classification is therefore that the greater ethnic pride resulting from the new multicultural agenda will lead indigenous parents with higher educational attainment to more frequently identify their children as indigenous. This *ethnic pride hypothesis* leads to an opposite prediction about the impact of parental socioeconomic status on children's indigenous identification as the stigmatization hypothesis proposed in the previous section.

Pride in their indigenous heritage is not the only possible reason why parents might seek to identify their children as indigenous. Parents could potentially choose to identify their children as indigenous for instrumental reasons. Research in other national contexts such as Brazil suggests that affirmative action policies recently implemented by the state create an incentive for individuals to identify as members of disadvantaged racial groups. Francis and Tannuri-Pianto (2012) find evidence of a shift in the racial identification of students applying to a major Brazilian university following the implementation of a quota system whereby 20 percent of admission slots were reserved for applicants who self-identify as black (*negro*). They attribute this shift in part to students' misrepresentation of their self-perceived race, but also to a genuine embrace of a black identity among those in the intermediate racial category (*pardos*). Such instrumental considerations are unlikely to play a major role in individuals' ethnic identification in Mexico. In contrast to Brazil, the Mexican government has not implemented affirmative action policies that might encourage individuals of higher socioeconomic status to identify themselves and their children as indigenous. Indigenous students are not generally given preferential treatment in university admissions. Educational programs geared towards indigenous schoolchildren are mostly concerned with providing bilingual education to children whose first language is not Spanish (Terborg, García Landa and Moore 2008). Government assistance programs are also largely need-based, rather than targeted at specific ethnic groups. In particular, the conditional cash transfer program known as *Oportunidades*, by far the largest assistance program in Mexico, does not specifically use indigenous identification as a criterion for qualification (SEDESOL n.d.; Orozco and Hubert 2005).¹

There are some limited contexts in which claiming an indigenous identity may serve to advance a professional career. In a recent ethnography of Mayan professionals in Southeastern Mexico, López Santillán (2011) finds that a majority of these professionals are employed in public sector positions where their indigenous identity serves as an asset, such as in government agencies directly involved in indigenous affairs. However, this finding does not appear to extend to the private sector, where an indigenous identity does not generally serve as a resource for career advancement. Employment in government agencies of this sort is too small to have a large scale effect on indigenous identification.

Ethnic Classification in Mexico: Language versus Proxy Self-identification

An individual's ability to cross an ethnic boundary will depend to a large extent on the criteria used for ethnic classification. Some boundaries will be more difficult to cross because they entail characteristics that typically do not change within a generation. Alba (2005) argues that crossing brighter boundaries in particular may be more difficult and costly psychologically because it entails a sharper break with the past. The same holds true across generations. The ability and willingness of parents to classify their children in a different category as themselves will depend on the exact criteria for ethnic classification. Two different criteria are currently used by the Mexican census to identify the indigenous population. In this section I discuss how each criterion may affect the rate at which children of indigenous parents are also identified as indigenous, and how the likelihood of being identified as indigenous will vary with parents' socioeconomic status.

Language Proficiency

Until 2000 the sole criterion used for ethnic classification in the Mexican census was an individual's ability to speak an indigenous language.² Any person who could speak one of the many indigenous languages in Mexico was thereby considered indigenous (the 2010 identified 89 different indigenous languages). Language proficiency may be thought to provide a bright boundary between ethnic categories insofar as an individual who does not speak an indigenous language simply cannot be considered indigenous. For this reason, language proficiency has often been considered a clearer measure of indigeneity compared to some alternatives (Valdés 1995; CONAPO 2001: 165–166; de la Peña 2005: 728; Layton and Patrinos 2006: 29–30; Ramírez 2006). However, as Alba (2005: 35–37) notes, language proficiency generally does not provide a bright boundary between ethnic categories because the same individual may speak two languages, making his or her ethnic categorization ambiguous. Another problem with using language proficiency is that it forces individuals to

¹Programs sponsored by government agencies in charge of indigenous affairs are often focused on matters such as the respect of human rights and the preservation of indigenous languages and cultures (CDI 2011). Other programs target entire communities considered to be indigenous (CDI 2005), thus providing little incentive for individuals to claim an indigenous identity. Finally, another possible incentive for individuals to identify as indigenous in rural areas would be gaining access to land. This explanation resembles one of many given for the resurgence in Native American identification in the U.S., namely that it resulted from individuals' claims to tribal lands (Nagel 1995). However, the land reform program by which indigenous communities (and others) could be provided titles to lands in Mexico effectively ended with the reform of the agrarian laws in 1992.

²Every census since 1900 has included a question about indigenous language use, and researchers during the twentieth century relied primarily on this question to identify the indigenous population. The 1921 census was a rare exception in that it included a question about household members' "race". In the mid-twentieth century researchers advocated the use of questions from the census about "cultural" markers, including diet and footwear, to identify the indigenous population. For a discussion of the history of racial and ethnic classification in Mexico see González Navarro (1970) and Valdés (1995).

dichotomize what is essentially a continuous variable. An individual's ability to speak an indigenous language may fall anywhere in the spectrum from complete mastery of the language to a rudimentary understanding, yet the census simply asks whether he or she is able to speak it. Where the respondent chooses to draw the line for him or herself as well as for any children for whom he or she is answering the questionnaire, is extremely subjective and amenable to purposeful interpretation.

A more substantive concern is whether language proficiency actually corresponds to the way that indigenous ethnicity is defined in everyday life. Considerable anthropological research suggests that using language proficiency as a criterion for ethnic classification is at best an oversimplification of the way that group membership is defined among the different indigenous peoples in Mexico (e.g., Bonfil Batalla 1996 [1987]; Bartolomé and Barabas 1996; Bartolomé 1997). For many indigenous groups language proficiency is indeed a key defining characteristic, while for others it is much less important (Bartolomé 1997: 81–84). There are undoubtedly many cases of individuals who have lost the ability to speak a particular language but who nevertheless consider themselves, and are considered by others, as members of an indigenous group. It is much less common, however, for an individual to speak an indigenous language and yet not be considered a member of any indigenous group. Language proficiency is therefore an overly restrictive criterion for indigenous identification.

A substantial body of research in the sociology of language has examined the factors associated with minority language loss across generations. Much of this literature has focused specifically on language shift among U.S. immigrants, for whom language use is usually not a key defining characteristic of their ethnicity. Nevertheless, findings from this literature may help us formulate specific hypotheses about the intergenerational loss of indigenous language proficiency, and hence indigenous identification according to the language criterion used by the Mexican census. Most importantly for our purposes, research on language retention among second generation immigrants in the U.S. has found a greater loss of proficiency in a minority language among children of parents with higher socioeconomic status. For example, Alba et al. (2002) find that immigrant children of parents with higher educational attainment are significantly more likely to speak only English at home. Similarly, Lutz (2006) finds greater family income to be associated with lower odds that Latino youth will speak Spanish. As Lutz (2006) notes, these findings are consistent with an assimilationist perspective according to which parents of higher socioeconomic status are more integrated into the dominant culture and are therefore less likely to transmit their language of origin to their children. Drawing on this assimilationist perspective we may similarly hypothesize that indigenous parents of higher socioeconomic status in Mexico will be less likely to transmit their proficiency in an indigenous language to their children. These children will consequently not be classified as indigenous according to the language criterion used by the Mexican census. The assimilationist perspective therefore leads to the same expectation of a loss of indigenous classification with greater parental socioeconomic status as the stigmatization hypothesis when language proficiency is used as a criterion. Stigmatization may also play a direct role in language loss. Ethnographic work has noted that indigenous parents may purposely prevent their children from learning an

indigenous language to prevent discrimination (Bartolomé 1997: 82; López Santillán 2011: 172–173).

Additional factors may also influence children's ability to speak the indigenous language of their parents. In his classic work on the sociology of language, Fishman (1972: 107–140) argues that the rate of language loss for successive immigrant generations is associated with contextual factors such as the level of urbanization and the concentration of the immigrant group population in the community of residence. He suggests that rural residents are less likely to shift to the dominant language than urban dwellers because they are more isolated. A larger concentration of speakers of the same minority language promotes the retention of the language for similar reasons. The importance of the concentration of minority language speakers for the preservation of language across generations has been corroborated by numerous studies of immigrant language retention in the U.S. (e.g., Lieberman and Curry 1971; Stevens 1992; Veltman 1988; Alba et al. 2002). Stevens (1992) argues that intergenerational language shift in the U.S. is also a function of the rate of intermarriage between English and non-English speakers. At the individual-level, Lutz (2006) finds that gender plays a significant role. She shows that Latino girls are significantly more likely to retain the ability to speak Spanish well compared to boys, which she suggests may be due to girls' greater verbal aptitude. In the analysis below I will also control for the effect of these various demographic and contextual factors, including children's gender, intermarriage among parents, rural residence, and the concentration of indigenous language speakers in a municipality.

Finally, the Mexican government's embrace of the new multicultural agenda could have also encouraged the preservation of indigenous languages through the expansion of its indigenous language education program. In this program indigenous children of primary and pre-school age are taught in their native language (Tinajero and Englander 2011). While critics argue that the government's efforts have been insufficient or ineffective (Warman 2003), the expansion of indigenous language instruction at schools could nevertheless have helped some children retain the language of their parents. In the statistical analysis below I will therefore test the hypothesis that the presence of indigenous language schools in a municipality increases the retention of indigenous languages across generations. Following critics of the quality of instruction at these schools, I will also test whether their presence improves educational outcomes for children in the second part of my statistical analysis.

Proxy self-identification

Responding to pressures from indigenous rights activists who argued that language use was an externally-imposed criterion for ethnic classification that resulted in the undercounting of the indigenous population, the long form of the 2000 Mexican census for the first time introduced a question meant to capture individuals' self-identification (INEGI 2000; Friedlander 2006:207–208). Self-identification is usually considered the preferred method for ethnic classification insofar as it allows individuals greater freedom to identify themselves as they wish. International legislation has in fact established indigenous people's ability to identify their own ethnicity as an individual and collective right. The ILO's Indigenous and Tribal Peoples Convention to which Mexico became a signatory in 1990

specifically established self-identification as a “fundamental criterion” for determining who is to be considered indigenous and therefore subject to the guarantees afforded by the landmark treaty (Article 1, ILO [1989]; ILO 2003). Partly as a result of such international legislation as well as pressure from domestic groups, a Mexican constitutional reform inscribed a definition of indigenous identity based on individuals’ self-perception into law in 2001 (de la Peña 2006).

One important limitation of the method actually used by the Mexican census to collect individual’s ethnic identification is that a single individual within the household may answer the census questionnaire. A discrepancy could therefore arise between the informant’s categorization of a household resident and that resident’s own identification. This problem is not unique to the Mexican census. Many other censuses and household surveys worldwide, including the U.S. and Brazilian censuses, collect information about residents’ race and ethnicity from a single informant. In an attempt to address this problem, the ethnic identification question was slightly revised in the 2010 Mexican census questionnaire. Instead of simply asking whether a household resident was indigenous, the 2010 census specifically asked whether the household member *considered him or herself* to be indigenous. While this phrasing constitutes a definite improvement over the 2000 census in that the informant is asked about each resident’s own perception, the informant may not always be aware of how that resident would choose to identify him or herself. This method of ethnic classification is therefore best described as one based on *proxy self-identification*. Studies using the ethnic and racial identification of household residents in population censuses and household surveys in other national contexts often cannot identify the specific informant (e.g., Schwartzman 2007; Marteleto 2012). Fortunately, the Mexican census identifies the informant in each household. As explained in the methodological section below, I am therefore able to ensure that information regarding the ethnic self-identification of parents and their children in the study is provided by the parents themselves.

Because it depends on individual’s subjective view of themselves and how they wish to be perceived by others, proxy self-identification generally provides a more blurred ethnic boundary than a classification system based on language proficiency. All a respondent has to do to abandon the often stigmatizing indigenous identity for him or herself as well as for others for whom he or she is answering the census is to say that they are not indigenous. Thus, if the stigmatization hypothesis is true and parents of higher socioeconomic status avoid the indigenous category for their children because of the restrictions it imposes on their social aspirations, then we should observe a *stronger negative association* between parents’ socioeconomic status and children’s indigenous identification when proxy self-identification is used instead of language proficiency.

On the other hand, because it is less restrictive, proxy self-identification might retain those individuals who have lost the ability to speak an indigenous language but who nevertheless feel connected to and proud of their indigenous heritage. It will be easier for highly educated parents who embrace the new multicultural message to claim an indigenous identity for themselves and their children if they are not required to speak an indigenous language. If the ethnic pride hypothesis is correct, we should therefore observe a *stronger positive association* between parents’ socioeconomic status and children’s indigenous proxy self-

identification. In the analysis below I will specifically examine the rate at which children of indigenous parents will be classified in the same ethnic category as their parents when each of the two systems of classification is used. I will also compare the extent to which each classification system leads to a shift away from the indigenous category for children of parents with higher educational attainment.

Data and Measurements

Data for the analysis below are obtained from the ten-percent sample of the 2010 Mexican population census (INEGI 2011). The sample is representative at the national level as well as for all 2,456 municipalities nationwide. The long-form questionnaire of the census collects information regarding both indigenous language proficiency and indigenous proxy self-identification. First, with regards to language proficiency, the questionnaire asks whether each household resident speaks an indigenous language and if so, which one. If the household resident does not speak an indigenous language the questionnaire asks whether he or she at least understands an indigenous language. In the statistical analysis below I define language proficiency as the ability to speak an indigenous language rather than the ability to simply understand it because the former is a more widely used criterion for indigenous identification in Mexico, and because an individual's ability to speak an indigenous language is a less subjective measure than his or her ability to understand the language. However, all the results presented below were replicated using language comprehension as an alternative criterion.³

The second measure of indigenous identification relies on individuals' own perception of their ethnicity as provided by the household informant. The household informant is asked whether each household member considers him or herself to be indigenous "according to his or her culture".⁴ Because I am interested in examining how parents classify themselves and their children, the analysis of children's indigenous identification below is limited to cases where the mother or the father is the informant (children themselves cannot be the household informants because they must be at least 15 years of age to answer the census). Limiting the analysis in this way also ensures that the method used for classifying the mother and the father is as close as possible to self-identification.⁵

Both measures of indigeneity—language proficiency and proxy self-identification—are used to compare children's indigenous classification with that of their parents, and to examine the association between parents' educational attainment and children's classification. In contrast to many other surveys used to examine the ethnic and racial identification of parents and their children in the Latin American context, which only allow the parents of a child to be identified if one of them is the head of household (e.g., Schwartzman 2007; Marteleto 2012),

³I also tested separate models for the five most common indigenous languages in Mexico according to the INALI: Náhuatl, Tzeltal, Tzotzil, Mixteco and Maya (in descending order). The results were also consistent with those presented below, with the partial exception of the Tzeltal group for whom the association between mothers' education and children's ability to speak the language did not reach statistical significance at the .05 level.

⁴The questionnaire does not ask the specific indigenous group to which a household resident considers him or herself to belong, so no further distinctions are possible as they are for indigenous language speakers.

⁵Among Mexican children 5 to 15 years of age, the mother is the census informant in 60.2% of cases, whereas the father is the informant in 15.9% of cases.

the 2010 Mexican census specifically identifies the mother and the father of every child so long as they are living in the same household. This allows me to include children living in extended family households (17.4% of the children are not children of the heads of household). Separate models are tested for mothers and fathers to compare their relative importance in children's classification (Schwartzman 2007). Both parents need not be residing in the same household as the child. As explained below, a variable explicitly captures whether the other parent is absent.

The analysis is restricted to children 5 to 15 years of age. Children under the age of 5 may not yet have a well-established ethnic identification. Children over the age of 15 may no longer be living in their parents' household thus making it impossible to identify their parents' indigenous language proficiency and self-identification from the census data. Moreover, individuals who remain in their parents' household after age 15 are probably not representative of all children in their age group, but rather are selected based on characteristics that may in turn be correlated with ethnicity (for example, norms regarding the proper age to marry and move out of the household may vary by ethnicity). Thus, including children who are much older could result in selection bias. Nevertheless, in separate analyses not presented here but available in the online Appendix, the same models were tested for children 16 to 25 years of age, whose ethnic identity may be considered firmer than that of younger children. The results were generally consistent with those presented below suggesting that the conclusions also apply to young adult children.

The association between children's indigenous classification and parents' educational attainment is tested in two ways. First, random effects models are used to predict the odds that children of indigenous mothers and indigenous fathers will be classified as indigenous while accounting for the characteristics of the children, their parents, and the community in which they reside. In the terminology used in multilevel modeling, children may be thought to be nested within municipalities. Municipal-level random effects are necessary to properly estimate the regression coefficients for the municipal-level predictors described below. Second, in order to fully control for municipality characteristics that are unobserved and may be correlated with the variables of interest, I also test municipality fixed effects models. Sampling weights are provided by the Mexican census and used throughout the analysis. The models for children's ethnic identification are limited to children of indigenous parents because there are very few cases of children classified as indigenous where neither parent is indigenous (0.07% of children according to language proficiency and 0.34% according to proxy self-identification). Only one child from each mother and each father (chosen at random) is included in the models for mothers and fathers respectively in order to avoid overweighing population groups with higher fertility rates, and to ensure the independence of cases in the regression models.

To test the association between parents' educational attainment and children's indigenous classification I include as a predictor the years of formal education of each parent. Negative coefficients for mother's or father's educational attainment would indicate the presence of a systematic shift away from the indigenous category with greater parental socioeconomic status consistent with the stigmatization hypothesis. Positive coefficients for parents' educational attainment would indicate a greater embrace of an indigenous identity by

parents who are more educated consistent with the ethnic pride hypothesis. Moreover, by comparing models using language proficiency and proxy self-identification as criteria for indigenous classification, I am able to assess whether the shift in indigenous identification is more pronounced with one classification system than another.

Other Predictors

Parents' education may affect children's ethnic classification not only because it shapes inheritance rules according to which children of indigenous parents of higher socioeconomic status may be considered as non-indigenous, but also through intermarriage (Schwartzman 2007; Duncan and Trejo 2011). If more educated indigenous men and women tend to marry non-indigenous partners then their children may be less likely to be classified as indigenous because of their spouse's non-indigenous identification. A similar argument has also been made with regards to minority language use (Stevens 1992). To control for the effect of intermarriage I therefore include as a predictor the indigenous identification of the other parent in the regression models for both indigenous mothers and fathers. Separate categories are distinguished for parents whose indigenous identification is unknown and for those who are not living in the household. The latter category is particularly important for mothers since a large percentage of children are not living with their fathers. Moreover, there are significant differences in the percentage of absent fathers across ethnic categories. Children of indigenous mothers are significantly less likely not to be living with their fathers than children of non-indigenous mothers.⁶

Two additional characteristics of parents are used as predictors of their children's indigenous classification. First, men and women who are older may be expected to hold more negative views about indigenous peoples that were more prevalent in Mexico at earlier historical periods and may therefore endeavor to have their children not be identified as indigenous, and not learn their parents' indigenous language. I therefore control for the age of the parent in the regression models predicting children's classification. Second, children of indigenous parents who migrated out of their communities of origin will be less likely to be classified as indigenous since they will have less contact with other members of their parents' ethnic group than those who did not migrate. Also, individuals who have left their communities of origin may be precisely those with less attachment to their indigenous heritage, and who may therefore be less likely to pass on their indigenous identification to their children. I therefore control for parents' migrant status using information about their place of birth. Any parent born in a different state is considered a migrant.

Children's age is also used as a predictor of their indigenous classification. Older children may have gained a greater understanding of an indigenous language. On the other hand, children may also move away from their parents' culture and traditions with age and may therefore be less likely to be identified as indigenous. Gender norms may also affect which children learn the language of their parents or who carries on the traditions of their

⁶Limiting the analysis to children of two-parent households could potentially bias the estimates of the association between parental education and children's indigenous identification if one ethnic group has higher levels of education and education is associated with a greater or lower risk of divorce or separation.

communities. A child's gender is therefore included as a predictor of indigenous identification in all the regression models.

Several community-level characteristics are also expected to increase the odds that a child of an indigenous parent will also be classified as indigenous. Children of indigenous parents growing up in predominantly indigenous communities are expected to have higher odds of learning an indigenous language and identifying as indigenous since they will be more frequently in contact with other members of the same indigenous group. The proportion of municipal residents 5 years of age or older who speak an indigenous language, and the proportion identified as indigenous according to the 2010 census are used to control for the relative size of the indigenous population in the regression models for language proficiency and proxy self-identification respectively.

To examine the impact of the Mexican government's education policies on the retention of indigenous languages and indigenous self-identification, I include as a predictor in the regression models a dummy variable indicating the presence of indigenous schools in a municipality. Indigenous schools are administered by the Mexican Ministry of Public Education. These schools teach preschool and primary school children in indigenous languages, and are therefore expected to increase language retention across generations.⁷ The regression models also control for the level of urbanization of the city or town in which children reside. Four population sizes are distinguished: towns with less than 2,500 residents (baseline), those with 2,500 to 14,999 residents, 15,000 to 99,999 residents, and 100,000 residents or more. Language retention and indigenous identification are expected to be lower in more urban areas where children will be exposed to many more cultural influences. Finally, regional dummy variables are also included as predictors in the models to control for differences in attitudes towards indigenous peoples across regions of the country. Mexican states are grouped into five regions according to the Mexican National Institute of Statistics, Geography and Informatics (INEGI 2009), with the northwestern region used as the baseline category. Descriptive statistics for all variables are provided in Table 1.

Results

Descriptive Results

Figure 1 shows the percentage of individuals in different age groups who are classified as indigenous based on language proficiency and proxy self-identification according to the 2010 Mexican census. As noted earlier, language proficiency constitutes a much more restrictive criterion for indigenous identification and therefore results in a much smaller estimate of the indigenous population for every age group. Nationally, 42.1% of individuals classified as indigenous by proxy self-identification are able to speak an indigenous language, while 94.1% of those who are able to speak an indigenous language are classified as indigenous by proxy self-identification. In contrast to the percentage of indigenous language speakers, which generally declines for younger age groups, the relation between the percentage of individuals classified as indigenous using proxy self-identification and age

⁷Information about the municipalities where indigenous schools are located were obtained from the Ministry of Education (<http://basica.sep.gob.mx/dgei/flash/mapa-dgei30JUNIO.swf>) [last accessed September 2013]

is curvilinear. While not conclusive, the higher rates of proxy self-identification among younger cohorts is consistent with growing ethnic pride and a reclaiming of indigenous identity for children and young adults.

Figure 2 shows the relation between indigenous mothers' education and their children's ethnic classification according to the two criteria used by the Mexican census. The sample of children in this figure is limited to those whose parents are both classified as indigenous in order to control for the higher rate of intermarriage for mothers with more education. Overall, children of indigenous parents are much more likely to also be classified as indigenous when proxy self-identification is used as a criterion than when language proficiency is used. Among children of parents who are both classified as indigenous based on proxy self-identification 89.9% are also classified as indigenous. By contrast, only 67.4% of children of parents who speak an indigenous language will be able to speak it themselves (the corresponding percentages are lower when only one parent is classified as indigenous). Second, the rate at which children are classified as indigenous based on language proficiency declines much more rapidly with mother's education. For example, the percentage of children sharing the indigenous classification of their mothers declines by 39.7% when mother's education increases from 0 to 9 years of education, while the percentage of children who are identified as indigenous using proxy self-identification only declines by only 4.6%. In the multivariate analysis below I will more formally test this relation between parental education and children's indigenous classification while controlling for many other individual and community-level factors.

Multivariate Models for Language Proficiency

Table 2 shows the results of the random effects logit models predicting children's odds of being classified as indigenous based on language proficiency using the characteristics of the mothers and fathers as predictors (left and right panels respectively). As noted earlier, only children of mothers and fathers who speak an indigenous language are included in the sample used to test the models in each panel respectively. In all the models presented, mothers' and fathers' educational attainment is strongly and significantly associated with lower odds that their children will be able to speak an indigenous language. For example, children of mothers who speak an indigenous language have 10.9% lower odds of speaking an indigenous language themselves for every additional year of schooling of their mother according to the most complete model ($1 - \exp(-.115)$). This loss of indigenous classification based on language proficiency for children of more highly educated parents is consistent with findings from research on minority language use among second generation immigrant children in the U.S. (Alba et al. 2002; Lutz 2006). However, in the Mexican case the loss of language proficiency among children of indigenous language speakers takes on a greater significance because language proficiency continues to be used to identify the indigenous population by researchers and policy makers (e.g., Ramírez 2006; Borja-Vega, Lunde and García Moreno 2007; CDI 2011). Model 4 in each panel of Table 2 interacts parents' years of education with the level of urbanization of the community. The results indicate very little difference in the association between parents' educational attainment and children's language proficiency by level of urbanization.

Intermarriage seems to partly account for the loss of indigenous language with greater educational attainment of parents, but does not explain it entirely. For example, when the indigenous language proficiency of the father is introduced as a predictor of children's language proficiency in Model 3 the coefficient for mothers' years of education is reduced by 15.8%. The other parent's ability to speak an indigenous language naturally increases the odds that the child will speak it. More interestingly, having an absent parent also increases the odds of acquiring proficiency in an indigenous language for the child compared to having another parent who does not speak the language, particularly if the absent parent is the father. Intermarriage is a more important predictor of children's indigenous language proficiency in the regression models for fathers than in the models for mothers. Having a mother who speaks an indigenous language is more strongly associated with higher odds that a child will also speak the language than having a father who speaks an indigenous language (the difference is statistically significant).

The coefficients for the remaining predictors are broadly consistent with expectations. Older parents who are probably influenced by older and more negative views about indigenous peoples in Mexico are significantly less likely to transmit their knowledge of an indigenous language to their children. Similarly, migrant parents who have left the indigenous communities in which they grew up and who are therefore probably less attached to their indigenous identity, are also significantly less likely to transmit their knowledge of their indigenous language to their children. By contrast, a child's own demographic characteristics, namely his or her gender and age, are only weakly associated with their ability to speak an indigenous language. Female children are no more likely to than male children to speak the language, while older children are only slightly more likely to speak it.

With regards to the impact of community-level characteristics, the results of the models presented in Table 2 indicate that living in municipalities where a higher proportion of residents speak an indigenous language is associated with higher odds that a child will also be able to speak the language. Perhaps more importantly, the presence of indigenous schools in a municipality appears to strongly encourage greater retention of indigenous language proficiency across generations. Having at least one indigenous school in the municipality is associated with 44.1% higher odds that a child of an indigenous mother will learn his or her mother's language. This finding suggests that the Mexican government's efforts have been successful in increasing indigenous language retention.⁸

Multivariate Models for Proxy Self-identification

Table 3 shows the results of the random effects logit models predicting children's indigenous classification when proxy self-identification is used. The results are markedly different from those predicting children's classification based on language proficiency. Most importantly, parental education is *positively* associated with children's indigenous identification in contrast to the negative association between parental education and children's language proficiency. The odds that a child will be identified as indigenous actually increase with every additional year of education of the mother and of the father

⁸It is important to highlight that this interpretation is based on an aggregate-level measure of indigenous schooling. We do not know whether each particular child attends an indigenous school.

once all other relevant factors are controlled (Model 3 in both panels). The results from Model 4 further indicate that the association between parental education and the indigenous identification of children varies by level of urbanization. In the most rural towns (those with less than 2,500 residents) both mothers' and fathers' education is associated with slightly lower odds that a child will be identified as indigenous. However, in more urban areas parents' education is associated with higher odds that children will be identified as indigenous.

The positive association between parental education and children's indigenous proxy self-identification is consistent with the ethnic pride hypothesis according to which indigenous parents with higher educational attainment are more likely to claim an indigenous identity for themselves and their children. Indigenous parents with higher levels of education were hypothesized to be more exposed to the new multicultural agenda promoted by the Mexican state. The multicultural discourse may also receive more widespread acceptance among educated parents in urban areas, thus explaining the stronger positive association in more urban settings.

Some other differences between the results of the models predicting children's indigenous classification based on language proficiency and proxy self-identification are evident. First, intermarriage is slightly less important for children's indigenous proxy self-identification than for their indigenous language proficiency. The coefficient for fathers' indigenous classification is significantly smaller in the regression models for indigenous mothers when proxy self-identification is used for classification than when language proficiency is used. Second, community-level factors play a less prominent role in children's indigenous proxy self-identification than in their language proficiency. For example, the proportion of municipal residents classified as indigenous appears to be less important for children's classification when proxy self-identification is used as a criterion than when language proficiency is used. Similarly, the presence of indigenous language schools appears to increase indigenous language maintenance among children of indigenous parents, but not their odds of being classified as indigenous based on proxy self-identification.⁹

Fixed Effects Models

The results of the random effects logit models indicate that municipal-level characteristics such as the proportion of indigenous residents and the presence of indigenous schools are important predictors of children's ethnic identification. If other municipal characteristics not included in the models are also associated with children's identification and they are correlated with key explanatory variables such as parents' educational attainment then the results of the random effects models may be biased due to endogeneity. To address this potential problem I tested fixed effects models using the same set of predictors as those in Tables 2 and 3 (except for the municipal-level predictors since municipal differences are perfectly captured by the fixed effects). To conserve space only the most complete models are tested using mother's language proficiency and proxy self-identification. Because estimating fixed effects logit models is computationally prohibitive for large sample sizes

⁹All these differences between the models for language proficiency and proxy self-identification are statistically significant at the .05 level or higher.

such as the one extracted from the ten percent sample of the census, I used Linear Probability Models (LPM) instead (Wooldridge 2011: 562–565). In these models the probability that a child is classified as indigenous is assumed to be a linear function of the set of predictors. The results of the LPM models presented in Table 4 replicate all the key findings discussed previously. Because the dependent variable is now expressed as a probability instead of log odds, the scale of the coefficients is different. However, the relevant coefficients are statistically significant in the same direction. In particular, a mother's educational attainment is negatively associated with a child's indigenous language proficiency and positively associated with the probability that the child will be identified as indigenous. The probability that a child will be identified as indigenous also increases with the level of urbanization. The association between mothers' education and children's proxy self-identification also increases with the level of urbanization.¹⁰

Ethnic Differences in School Outcomes for Children

The regression models presented in the previous sections examined the relation between parental education and children's indigenous categorization in Mexico using the two different criteria recognized by the Mexican census —language proficiency and proxy self-identification. Given how dramatically indigenous language proficiency is lost with parental education, it would seem that proxy self-identification is a more stable and therefore preferable criterion for indigenous classification in Mexico. Proxy self-identification may also be a preferable method of classification on theoretical grounds, as it allows individuals greater freedom to choose their own ethnicity. However, because it identifies children that are less integrated into Mexican society and therefore more disadvantaged, language proficiency may be a better measure with which to study social inequality. In this section I examine how the systematic shift in ethnic categorization with parents' education affects estimates of the educational disadvantage of indigenous children in Mexico when each of the two classification systems is used.

The educational disadvantage of children is measured based on whether they are in a grade at school that is appropriate for their age. Since all Mexican children should have started first grade by the time they are 7 years old, any child whose age is no more than 7 years greater than their last completed school year is considered to be in an age-appropriate grade or higher. Only children old enough to have completed first grade (i.e., those 8 years or older), but young enough to still be living with their parents (i.e. those 15 years or younger), are included in this part of the analysis. Because I am interested in measuring the educational disadvantage of children categorized as indigenous compared to all others, the sample now includes all Mexican children in this age group regardless of their ethnic classification. Mothers' demographic characteristics are used as predictors of children's educational disadvantage instead of fathers' characteristics because many more children do not live with their fathers than their mothers leading to many more omitted cases. In order to fully account for the association between parents' educational attainment and children's odds of being in a grade-appropriate level I use as a predictor the average years of schooling

¹⁰Urbanization is defined at the sub-municipality level and can therefore be included as a predictor in the municipality fixed effects models.

of both parents for cases where both parents are present.¹¹ The logged household income is also introduced as a predictor in one of the models to further test the association between socioeconomic status and the educational disadvantage of children. As in the analysis presented in the previous section, only one child from each mother is selected at random to prevent the over-representation of population groups with higher fertility rates and to preserve independence across cases.¹²

Table 5 shows the results of the random effects logit models predicting children's odds of being in a grade-appropriate level using both language proficiency and proxy self-identification as criteria for indigenous classification.¹³ Model 1 in both panels shows the disadvantage associated with having an indigenous mother. According to both criteria for ethnic classification, children of indigenous mothers have significantly lower odds of being in the age-appropriate grade even when controlling for many other factors. However, children of mothers who speak an indigenous language are significantly more disadvantaged than children of mothers who only identify themselves as indigenous. The former have 38.7% lower odds of being in the age-appropriate grade, while the latter have 22.1% lower odds compared to their counterparts with non-indigenous mothers. The coefficients for indigenous mothers in these models are particularly meaningful because they also measure the hypothetical disadvantage of being an indigenous child if there was a perfect transmission of ethnicity across generations, that is, if every child of an indigenous mother were also considered to be indigenous, in which case the ethnicity of the mother and the child would be indistinguishable. This is approximately the coefficient we would observe for the child if indigenous identity was completely determined by ancestry.

Model 2 in both panels of Table 5 uses a child's own ethnic categorization instead of his or her mother's categorization as a predictor. The results indicate a statistically significant disadvantage in schooling for indigenous children according to both systems of classification. Once again, the disadvantage of children classified as indigenous according to language proficiency is much larger than that faced by those classified as indigenous based on proxy self-identification, suggesting that language proficiency is a better measure of disadvantage (the difference is statistically significant at the .05 level). A comparison of Models 1 and 2 in each panel further allows us to gauge the impact that the shift away from indigenous identification with greater parental education has on estimates of children's disadvantage with regards to schooling. The fact that the magnitude of the negative coefficient for indigenous children according to language proficiency is significantly larger than that of indigenous mothers using the same criterion, suggests that only the most

¹¹This is the same strategy followed by other researchers looking at the intergenerational transmission of language (Alba et al. 2002; Lutz 2006). Introducing the educational attainment of both parents as separate predictors in the models may result in estimation problems since they are strongly correlated due to the high levels of educational homogamy in Latin American countries such as Mexico (Torche 2010).

¹²Because a child's educational disadvantage and his or her ethnic classification may both be a function of the same unmeasured characteristics, the estimates of the effect of a child's ethnicity on educational disadvantage in the models presented in Table 5 may be thought to suffer from endogeneity bias. In models not presented here in which the ethnicity of a child was treated as an endogenous predictor of his or her odds of being in a grade-appropriate level using the proportion of the municipal population that is indigenous as an instrument for a child's ethnic classification, I found the covariance of the error terms for the two equations not to be statistically significant at the .05 level, suggesting that ethnicity can be treated as an exogenous predictor.

¹³A possible confounding factor not included in the models is the skin color of parents and their children. Unfortunately, the Mexican census does not include any questions regarding skin color since it is not used for ethnic classification. See the online Appendix B for a discussion of the expected bias in the estimates of the coefficients for indigenous identification due to the omission of skin color.

disadvantaged children will inherit the language and be classified as indigenous according to language proficiency. By contrast, in the regression models where proxy self-identification is used as a criterion for classification, the magnitude of the negative coefficient for indigenous children is actually significantly smaller than that for indigenous mothers suggesting that the opposite selection process operates: those children that are slightly less disadvantaged will be classified as indigenous. This opposite pattern is consistent with our expectations based on the results presented in the previous section where children of more educated indigenous mothers were found to be less likely to speak an indigenous language, but slightly more likely to be identified as indigenous.

Model 3 in both panels of Table 5 include both a child and his or her mother's ethnic identification as predictors of the odds that a child will be in an age-appropriate grade at school. Interestingly, the results indicate that being the child of an indigenous mother is associated with worse schooling outcomes for children even after controlling for the child's own indigenous classification. In other words, children appear to be disadvantaged due to their mother's ethnicity not just their own. However, when the parents' educational attainment is introduced as a predictor in Model 4 in both panels, the magnitude of the coefficient for mother's ethnicity is substantially reduced suggesting that the disadvantage of having an indigenous mother is largely explained by indigenous mothers' lower educational attainment. It is important to note, however, that even after controlling for mothers' ethnicity and her educational attainment, children who are classified as indigenous based on language proficiency are still disadvantaged educationally, as are children of mothers classified as indigenous based on proxy self-identification (see Model 4 in both panels). Because these models also control for mothers' education, the negative coefficient for a child's language proficiency is net of the shift in indigenous identification of the child with greater parental education found in the previous section.¹⁴ Adding the logged household income in Model 5 does not significantly affect the coefficients for the child's or mother's ethnicity.

Finally, the results of the regression models in Table 5 suggest that the presence of indigenous schools in a municipality does not significantly improve the educational outcomes of children. Moreover, in models not presented here where the dummy variable for indigenous schools was interacted with children's indigenous classification, the presence of indigenous schools in a municipality was found not to increase indigenous children's odds of being in a grade-appropriate level. Thus, although the Mexican government's indigenous language education programs appear to increase the retention of indigenous languages, they do not seem to improve the educational outcomes of indigenous children.

Conclusions

Because of the remarkable fluidity in racial and ethnic classification in Latin America, the region provides an important setting in which to study social boundaries. However, recent studies on boundary crossing have focused mostly on Afro-Latin American countries such as Brazil, where racial classification is based on perceptions of skin color. In this paper I

¹⁴As noted above, regression models treating the ethnic identification of the child as an endogenous predictor of his or her odds of being in a grade-appropriate level showed the error terms of both equations to be uncorrelated. Children's indigenous identification can therefore be entered as an exogenous predictor in the models presented in Table 5.

have examined the ethnic boundary crossing process in the specific context of Mexico. In contrast to Brazil, in Indo-Latin American countries such as Mexico the primary socially-recognized distinction between the indigenous and non-indigenous population is not based on phenotypical differences such as differences in skin color. The social boundary that separates the indigenous population from the rest of Mexican society is instead defined based on characteristics such as language use, cultural practices and a subjective sense of belonging. Because individuals' indigenous classification is less constrained by their physical appearance we would expect it to be even more fluid and amenable to change with upward social mobility. On the other hand, individuals' attachment to a particular indigenous group with which they share close personal ties and a sense of belonging may be stronger than the attachment to a self-described skin color category even among those with higher socioeconomic status. In the terminology used by Brubaker (2004) and others (Loveman 1999; Wimmer 2008a; Bailey 2009), individuals who consider themselves indigenous are likely to exhibit a higher level of "groupness" compared to self-described skin color categories.¹⁵

The extent of movement across social boundaries in Mexico turns out to depend on the specific criteria used for ethnic classification. The results of the statistical analysis indicate a much larger loss of indigenous identification when language proficiency is used as a criterion for indigenous classification than when proxy self-identification is used. Children of indigenous parents are much less likely to be classified as indigenous according to language proficiency, especially when their parents have higher levels of educational attainment. By contrast, when proxy self-identification is used as a criterion, children of indigenous parents are more likely to be classified as indigenous, and greater parental education actually results in *higher* odds that children will be classified as indigenous.

The greater loss of indigenous language proficiency among children of parents with higher educational attainment is in some ways not surprising. Previous studies have shown a similar loss of minority language proficiency among children of more educated immigrant parents in the U.S. (Alba et al. 2002; Lutz 2006). However, the loss of indigenous language proficiency takes on a greater significance in Mexico because the ability to speak an indigenous language continues to be used as an indicator of ethnicity by researchers and policy makers (e.g., Ramírez 2006; Borja-Vega, Lunde and García Moreno 2007; CDI 2011). Using language proficiency as a criterion for indigenous classification not only results in a lower estimate of the overall size of the indigenous population, but as demonstrated in the second part of the statistical analysis, it also leads to a higher estimate of the socioeconomic disadvantage faced by indigenous children.

By contrast, the greater tendency for children of more educated parents to be classified as indigenous when proxy self-identification is used as a criterion is more unexpected. A vast amount of research documents the stigma that has traditionally been associated with being

¹⁵The indigenous category is, of course, a supra-ethnic category. Individuals who consider themselves as belonging to a particular indigenous group may feel no particular sense of attachment (perhaps even hostility) to members of other indigenous groups. Nevertheless, when an individual is asked by the census if he or she considers him or herself to be indigenous, the response is based on his or her affiliation with a specific group. Being a Tzotzil or Mixteco therefore means being indigenous for the rest of Mexican society.

considered indigenous in the broader Mexican society (e.g., Pitt-Rivers 1968; Friedlander 1975; Knight 1990; Bonfil Batalla 1996 [1987]; Nutini 1997). An indigenous identity constitutes a particular impediment for acceptance into the middle and upper classes (Colby and van den Berghe 1961; Pitt-Rivers 1968; Nutini 1997). It is therefore surprising that when people are allowed greater freedom to choose their own ethnic identification and that of their children they more frequently choose to identify as indigenous. It is perhaps even more surprising that indigenous parents with higher socioeconomic status choose to identify their children as indigenous at higher rates than parents of lower socioeconomic status since the former have more to lose by doing so.

One possible explanation for the greater retention of indigenous identification among children of more educated parents is that the multicultural discourse promoted by indigenous organizations and by the Mexican government in recent decades has resulted in less stigmatization and greater ethnic pride, particularly among the most educated segments of the indigenous population who are more exposed to the multicultural message. The multicultural message may also receive more widespread acceptance among educated parents in urban areas, thus explaining the stronger positive association between parents' education and children's indigenous proxy self-identification in urban settings.¹⁶ Ironically, an unintended consequence of multiculturalism and its associated increase in indigenous pride may be an underestimation of the disadvantage faced by indigenous children. As demonstrated in the second part of the statistical analysis, estimates of the educational disadvantage of indigenous children are lower when proxy self-identification is used, which may be due precisely to the fact that greater ethnic pride leads more educated parents to identify their children as indigenous.

Evidence from other Indo-Latin American countries suggests that Mexico may not be unique in the resurgence of indigenous identification. In Guatemala, the size of the population that identifies as indigenous increased by 6% during the 1990s. Layton and Patrinos (2006: 28) argue that this rise in the self-identified indigenous population may be due to "the increased comfort of some Guatemalans with their indigenous status after the peace accords and the Agreement on the Identity and Rights of Indigenous Peoples were signed in the mid 1990s." Mexico also instituted similar changes to the laws governing the treatment of indigenous peoples, and consequently may have also experienced a resurgence of indigenous identification.¹⁷ The resurgence of indigenous identity in Latin America also resembles the increase in Native American self-identification in the United States during the 1970s and 80s. Eschbach, Supple and Snipp (1998) find that the increase in the tendency to self-report as Native American in the U.S. census during the 1970s was particularly pronounced among the most educated. Just as in the Mexican case, the increase in Native American self-identification with education was highest in urban areas.

¹⁶Another factor that may have contributed to the greater resilience of indigenous self-identification is what we may call an ethnic turn in social and political mobilization since the 1990s. Like other countries in Latin America, Mexico experienced a cycle of intense protest activity in which indigenous ethnicity became the main cleavage for mobilization for the first time in many decades (Trejo 2009, 2012; Yashar 2005). This new cycle of protest, epitomized by the Zapatista rebellion in Southeastern Mexico, may have served to strengthen indigenous identities over the past decade.

¹⁷Unfortunately, differences in the question regarding ethnic self-identification between the 2000 and 2010 censuses make it impossible to estimate the change in the Mexican population that identifies as indigenous in the previous decade.

The way that indigenous peoples are identified in the population census and other official sources is changing rapidly not only in Mexico but in other Latin American countries as well (Layton and Patrinos 2006). Encouraged by indigenous rights activists and international organizations, many countries are moving towards a classification system based on self-identification instead of relying on language proficiency. It is therefore important to fully understand the implications of this shift in ethnic classification. Using self-identification to classify the indigenous population of course has many advantages. Compared to language proficiency, self-identification allows individuals greater freedom to identify themselves as they wish, even when the information is provided by a proxy. The ability to identify their own ethnicity is in fact considered a fundamental right of indigenous peoples worldwide according to international legislation (ILO 1989). However, self-identification is likely to capture a weaker form of ethnicity more akin to what Gans (1979) refers to as “symbolic ethnicity”. Researchers have used the concept of symbolic ethnicity to describe the residual attachment that Americans descended from European immigrants feel towards a few superficial symbols taken from their ancestors’ culture (Gans 1979; Alba 1990; Waters 1990). For many white Americans ethnicity is a cultural resource devoid of the traditional social underpinnings, such as strong ties to co-ethnics and insertion into a web of social obligations. Similarly, for children of indigenous migrants to urban areas, identifying as indigenous may be based on an attachment to a few cultural symbols without a personal connection to other members of the group, and with few social consequences.

For all its failings, language proficiency is more likely to capture a stronger form of ethnicity, with clear social implications. Speaking an indigenous language may in practice be a requirement for participating in group rituals, as well as for holding positions of responsibility within the community known as *cargos*, and providing volunteer work for collective projects known as *tequios*. Thus, in many cases language proficiency may indeed be an indicator of group membership (Bartolomé 1997: 81–84). At a more practical level, language proficiency is also more likely to capture the most disadvantaged segment of the indigenous population, and could therefore be useful in targeting social programs. For these reasons, indigenous language proficiency should be retained as an alternative measure in the census and other sociodemographic surveys. Future work should endeavor to disentangle how much of the disadvantage experienced by children who speak an indigenous language is due to lower proficiency in the majority language and how much is due to other factors.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

References

- Alba, Richard D. *Ethnic Identity: The Transformation of White America*. New Haven, CT: Yale University Press; 1990.
- Alba, Richard. Bright vs. blurred boundaries: Second-generation assimilation and exclusion in France, Germany, and the United States. *Ethnic and Racial Studies*. 2005; 28:20–49.
- Alba, Richard; Logan, John; Lutz, Amy; Stults, Brian. Only English by the Third Generation? Loss of Preservation of the Mother Tongue among the Grandchildren of Contemporary Immigrants. *Demography*. 2002; 39:467–484. [PubMed: 12205753]

- Alba, Richard D.; Nee, Victor. *Remaking the American Mainstream: Assimilation and Contemporary Immigration*. Cambridge MA: Harvard University Press; 2003.
- Bailey, Stanley R. *Legacies of Race: Identities, Attitudes, and Politics in Brazil*. Stanford, CA: Stanford University Press; 2009.
- Bailey, Stanley R.; Telles, Edward E. Multiracial versus Collective Black Categories: Examining Census Classification Debates in Brazil. *Ethnicities*. 2006; 6:74–101.
- Barth, Fredrik. Introduction. In: Barth, Fredrik, editor. *Ethnic Groups and Boundaries*. Boston, MA: Little Brown and Company; 1969. p. 9–38.
- Bartolomé, Miguel Alberto. *Gente de costumbre y gente de razón: Las identidades étnicas en México*. Mexico: Siglo Veintiuno Editores; 1997.
- Bartolomé, Miguel Alberto; Barabas, Alicia Mabel. *La Pluralidad en Peligro*. Mexico: Instituto Nacional de Antropología e Historia; 1996.
- Bonfil Batalla, Guillermo. *México Profundo: Reclaiming a Civilization*. Austin, TX: University of Texas Press; 1996. [1987].
- Borja-Vega, Christian; Lunde, Trine; García Moreno, Vicente. *Economic Opportunities for Indigenous Peoples in Mexico*. Washington, D.C.: The World Bank; 2007.
- Brading, David A. Manuel Gamio and Official Indigenismo in Mexico. *Bulletin of Latin American Research*. 1988; 7:75–89.
- Brubaker, Rogers. *Ethnicity without Groups*. Cambridge, MA: Harvard University Press; 2004.
- Colby, Benjamin N.; van den Berghe, Pierre L. *Ethnic Relations in Southeastern Mexico*. *American Anthropologist*. 1961; 63:772–792.
- Comisión Nacional para el Desarrollo de los Pueblos Indígenas (CDI). *Desarrollo Indígena en 50 Municipios*. Mexico: CDI; 2005.
- Comisión Nacional para el Desarrollo de los Pueblos Indígenas (CDI). *Acciones de Gobierno para el Desarrollo Integral de los Pueblos Indígenas*. Mexico: CDI; 2011.
- Consejo Nacional de Población (CONAPO). *La población de México en el nuevo siglo*. Mexico: CONAPO; 2001.
- Daniel, G Reginald. *Race and Multiraciality in Brazil and the United States*. University Park, PA: Pennsylvania State University Press; 2006.
- de la Peña, Guillermo. Social Citizenship, Ethnic Minority Demands, Human Rights and Neoliberal Paradoxes: A Case Study in Western Mexico. In: Sieder, Rachel, editor. *Multiculturalism in Latin America: Indigenous Rights, Diversity and Democracy*. New York: Palgrave Macmillan; 2002. p. 129–156.
- de la Peña, Guillermo. Social and Cultural Policies Toward Indigenous Peoples: Perspectives from Latin America. *Annual Review of Anthropology*. 2005; 34:717–739.
- de la Peña, Guillermo. A New Mexican Nationalism? Indigenous Rights, Constitutional Reform and the Conflicting Meanings of Multiculturalism. *Nations and Nationalism*. 2006; 12:279–302.
- Días Polanco, Héctor. *Autonomía regional: La autodeterminación de los pueblos indios*. Mexico: Siglo Veintiuno Editores; 1991.
- Doremus, Anne. Indigenism, Mestizaje, and National Identity in Mexico during the 1940s and the 1950s. *Mexican Studies/Estudios Mexicanos*. 2001; 17:375–402.
- Duany, Jorge. *The Puerto Rican Nation on the Move: Identities on the Island & in the United States*. Chapel Hill: University of North Carolina Press; 2002.
- Duncan, Brian; Trejo, Stephen J. Who Remains Mexican? Selective Ethnic Attrition and the Intergenerational Progress of Mexican Americans. In: Leal, David L.; Trejo, Stephen J., editors. *Latinos and the Economy: Integration and Impact on Schools, Labor Markets, and Beyond*. New York: Springer; 2011. p. 285–320.
- Eschbach, Karl; Supple, Khalil; Snipp, C Matthew. Changes in Racial Identification and the Educational Attainment of American Indians, 1970–1990. *Demography*. 1998; 35:35–43. [PubMed: 9512908]
- Fischman, Joshua A. *The Sociology of Language: An Interdisciplinary Social Science Approach to Language in Society*. Rowley, MA: Newbury House Publishers; 1972.

- Francis, Andrew M.; Tannuri-Pianto, Maria. Using Brazil's Racial Continuum to Examine the Short-Term Effects of Affirmative Action in Higher Education. *Journal of Human Resources*. 2012; 47:754–784.
- Francis, Andrew M.; Tannuri-Pianto, Maria. Endogenous Race in Brazil: Affirmative Action and the Construction of Racial Identity among Young Adults. *Economic Development and Cultural Change*. 2013; 61:731–753.
- Friedlander, Judith. *Being Indian in Hueyapan: A Study of Forced Identity in Contemporary Mexico*. New York: St. Martin's Press; 1975.
- Friedlander, Judith. *Being Indian in Hueyapan: A Revised and Updated Edition*. New York: Palgrave Macmillan; 2006.
- Gans, Herbert J. Symbolic Ethnicity: The Future of Ethnic Groups and Cultures in America. *Ethnic and Racial Studies*. 1979; 2:1–20.
- González Navaro, Moisés. Mestizaje in Mexico During the National Period. In: Mörner, Magnus, editor. *Race and Class in Latin America*. New York: Columbia University Press; 1970. p. 145-169.
- Gravlee, Clarence C. Ethnic Classification in Southeastern Puerto Rico: The Cultural Model of 'Color'. *Social Forces*. 2005; 83:949–970.
- Grodsky, Eric; Pager, Devah. The Structure of Disadvantage: Individual and Occupational Determinants of the Black-White Wage Gap. *American Sociological Review*. 2001; 66:542–567.
- Hale, Charles R. Does Multiculturalism Menace? Governance, Cultural Rights and the Politics of Identity in Guatemala. *Journal of Latin American Studies*. 2002; 34:485–524.
- Harris, Marvin. *Patterns of Race in the Americas*. Westport, CT: Greenwood Press; 1964.
- Hernández Bringas, Héctor Hiram. La definición de la población indígena en el censo de población del año 2000 en México. In: Hernández Bringas, Héctor Hiram, editor. *Los indios de México en el siglo XXI*. Mexico: UNAM, Centro Regional de Investigaciones Multidisciplinarias; 2007. p. 15-24.
- Horowitz, Donald L. *Ethnic Groups in Conflict*. Berkeley, CA: University of California Press; 1985.
- Instituto Nacional de Estadística, Geografía e Informática (INEGI). XII Censo General de Población y Vivienda 2000: Marco conceptual. Mexico: INEGI; 2000.
- Instituto Nacional de Estadística, Geografía e Informática (INEGI). *Compendios Estadísticos Regionales 2009*. Mexico: INEGI; 2009.
- Instituto Nacional de Estadística, Geografía e Informática (INEGI). *Diseño de la muestra censal 2010*. Mexico: INEGI; 2011.
- International Labour Organization (ILO). *Indigenous and Tribal Peoples Convention*. Geneva: ILO; 1989. [http://www.ilo.org/indigenous/Resources/Publications/WCMS_100897/lang-en/index.htm]
- International Labour Organization (ILO). *ILO Convention on Indigenous and Tribal Peoples, 1989 [No. 169]: A Manual*. Geneva: International Labour Organization; 2003. Revised Edition.
- Jencks, Christopher; Phillips, Meredith, editors. *The Black-White Test Score Gap*. Washington, DC: Brookings Institution Press; 1998.
- Knight, Alan. Racism, Revolution, and *Indigenismo*: Mexico 1910–1940. In: Graham, Richard, editor. *The Idea of Race in Latin America, 1870–1940*. Austin, TX: University of Texas Press; 1990. p. 71-113.
- Lamont, Michèle. The Dignity of Working Men: Morality and the Boundaries of Race, Class and Immigration. Cambridge, MA: Harvard University Press; 2000.
- Lamont, Michèle; Molnár, Virág. The Study of Boundaries in the Social Sciences. *Annual Review of Sociology*. 2002; 28:167–195.
- Layton, Heather Marie; Patrinos, Harry Anthony. Estimating the Number of Indigenous Peoples in Latin America. In: Hall, Gillette; Patrinos, Harry A., editors. *Indigenous Peoples, Poverty and Human Development in Latin America*. New York: Palgrave Macmillan; 2006. p. 25-39.
- Lee, Jennifer; Bean, Frank D. America's Changing Color Lines: Immigration, Race/Ethnicity, and Multiracial Identification. *Annual Review of Sociology*. 2004; 30:221–242.
- Liebersohn, Stanley; Curry, Timothy J. Language Shift in the United States: Some Demographic Clues. *International Migration Review*. 1971; 5:125–137.
- López Santillán, Ricardo. *Etnicidad y Clase Media*. Mexico: Universidad Autónoma de México; 2011.

- Loveman, Mara. Is 'Race' Essential. *American Sociological Review*. 1999; 64:891–898.
- Loveman, Mara; Muniz, Jeronimo O. How Puerto Rico Became White: Boundary Dynamics and Intercensus Racial Reclassification. *American Sociological Review*. 2007; 72:915–939.
- Lutz, Amy. Spanish Maintenance among English-Speaking Latino Youth: The Role of Individual and Social Characteristics. *Social Forces*. 2006; 84:1417–1433.
- Marteleteo, Leticia J. Educational Inequality by Race in Brazil, 1982–2007: Structural Changes and Shifts in Racial Classification. *Demography*. 2012; 49:337–358. [PubMed: 22259031]
- Montgomery, James D. The Population Dynamics of Black-White-Mulatto Racial Systems. *American Journal of Sociology*. 2011; 117:46–89.
- Mörner, Magnus. *Race Mixture in the History of Latin America*. Boston: Little, Brown; 1967.
- Nagel, Joane. American Indian Ethnic Renewal: Politics and the Resurgence of Identity. *American Sociological Review*. 1995; 60:947–965.
- Nobles, Melissa. *Shades of Citizenship: Race and the Census in Modern Politics*. Stanford, CA: Stanford University Press; 2000.
- Nutini, Hugo G. Class and Ethnicity in Mexico: Somatic and Racial Considerations. *Ethnology*. 1997; 36:227–238.
- Orozco, Mónica; Hubert, Cecilia. Social Protection Discussion Paper No. 0531. Washington, D.C.: The World Bank; 2005. La Focalización en el Programa de Desarrollo Humano Oportunidades de México.
- Pitt-Rivers, Julian. Race, Color, and Class in Central America and the Andes. In: Franklin, John Hope, editor. *Color and Race*. Boston: Houghton Mifflin; 1968. p. 264–281.
- Ramírez, Alejandro. Mexico. In: Hall, Gillette; Patrinos, Harry A., editors. *Indigenous Peoples, Poverty and Human Development in Latin America*. New York: Palgrave Macmillan; 2006. p. 150–198.
- Rodríguez, Clara E. *Changing Race: Latinos, the Census, and the History of Ethnicity in the United States*. New York: New York University Press; 2000.
- Schwartzman, Luisa Farah. Does Money Whiten? Intergenerational Changes in Racial Classification in Brazil. *American Sociological Review*. 2007; 72:940–963.
- Secretaría de Desarrollo Social (Sedesol). Método de Identificación y Permanencia de Hogares en Situación de Pobreza del Programa Oportunidades. Mexico: Sedesol; n.d. [http://www.oportunidades.gob.mx/Portal/wb/Web/metodo_de_identificacion_de_hogares_en_situacion_dj]
- Semyonov, Moshe; Lewin-Epstein, Noah. The Declining Racial Earnings' Gap in the United States: Multi-level Analysis of Males' Earnings, 1960–2000. *Social Science Research*. 2009; 38:296–311.
- Serrano Carreto, Enrique. Comisión Nacional para el Desarrollo de los Pueblos Indígenas. Santiago de Chile: CEPAL; 2005. La población indígena a través de los censos mexicanos.
- Skidmore, Thomas E. Toward a Comparative Analysis of Race Relations Since Abolition in Brazil and the United States. *Journal of Latin American Studies*. 1972; 4:1–28.
- Skidmore, Thomas E. Fact and Myth: Discovering a Racial Problem in Brazil. In: Goldscheider, Calvin, editor. *Population, Ethnicity, and Nation-Building*. Boulder, CO: Westview Press; 1995. p. 91–117.
- Speed, Shannon. Dangerous Discourses: Human Rights and Multiculturalism in Neoliberal Mexico. *PoLAR: Political and Legal Anthropology Review*. 2005; 28:29–51.
- Stavenhagen, Rodolfo. *La cuestión étnica*. Mexico: El Colegio de México; 2001.
- Stavenhagen, Rodolfo. Indigenous Peoples and the State in Latin America: An Ongoing Debate. In: Sieder, Rachel, editor. *Multiculturalism in Latin America: Indigenous Rights, Diversity and Democracy*. New York: Palgrave Macmillan; 2002. p. 24–44.
- Stevens, Gillian. The Social and Demographic Context of Language Use in the United States. *American Sociological Review*. 1992; 57:171–185.
- Telles, Edward E. Racial Ambiguity among the Brazilian Population. *Ethnic and Racial Studies*. 2002; 25:415–441.
- Telles, Edward E. *Race in Another America: The Significance of Skin Color in Brazil*. Princeton, NJ: Princeton University Press; 2004.

- Telles, Edward E.; Lim, Nelson. Does it Matter Who Answers the Race Question? Racial Classification and Income Inequality in Brazil. *Demography*. 1998; 35:465–474. [PubMed: 9850470]
- Terborg, Roland; García Landa, Laura; Moore, Pauline. The Language Situation in Mexico. *Current Issues in Language and Planning*. 2008; 7:415–518.
- Tilly, Charles. *Durable Inequality*. Berkeley, CA: University of California Press; 1998.
- Tilly, Charles. *Identities, Boundaries, and Social Ties*. Boulder, CO: Paradigm Publishers; 2005.
- Tinajero, Guadalupe; Englander, Karen. Bilingual-intercultural Education for Indigenous Children: The Case of Mexico in an Era of Globalization and Uprisings. *Intercultural Education*. 2011; 22:163–178.
- Torche, Florencia. Economic Inequality: A Comparative Analysis of Three Latin American Countries. *Demography*. 2010; 47:481–502. [PubMed: 20608107]
- Trejo, Guillermo. Religious Competition and Ethnic Mobilization in Latin America: Why the Catholic Church Promotes Indigenous Movements in Mexico. *American Political Science Review*. 2009; 103:323–342.
- Trejo, Guillermo. *Popular Movements in Autocracies: Religion, Repression, and Indigenous Collective Action in Mexico*. New York: Cambridge University Press; 2012.
- Valdés, Luz María. *Los indios en los censos de población*. Mexico: Universidad Nacional Autónoma de México; 1995.
- Valdés, Luz María, editor. *Los indios mexicanos en los censos del año 2000*. Mexico: Instituto de Investigaciones Jurídicas, UNAM; 2003.
- Veltman, Calvin J. *The Future of the Spanish Language in the United States*. New York: Hispanic Policy Development Project; 1988.
- Wade, Peter. *Blackness and Race Mixture: The Dynamics of Racial Identity in Colombia*. Baltimore: Johns Hopkins University Press; 1993.
- Warman, Arturo. *Los indios mexicanos en el umbral del milenio*. Mexico: Fondo de Cultural Económica; 2003.
- Warman, Arturo; Nolasco, Margarita; Bonfil, Guillermo; Olivera, Mercedes; Valencia, Enrique. *De eso que llaman Antropología Mexicana*. Mexico: Editorial Nuestro Tiempo; 1970.
- Waters, Mary C. *Ethnic Options: Choosing Identities in America*. Berkeley, CA: University of California Press; 1990.
- Western, Bruce; Pettit, Becky. Black-White Wage Inequality, Employment Rates, and Incarceration. *American Journal of Sociology*. 2005; 111:553–578.
- Wimmer, Andreas. The Making and Unmaking of Ethnic Boundaries: A Multilevel Process Theory. *American Journal of Sociology*. 2008a; 113:970–1022.
- Wimmer, Andreas. Elementary Strategies of Ethnic Boundary Making. *Ethnic and Racial Studies*. 2008b; 31:1025–1055.
- Wooldridge, Jeffrey M. *Econometric Analysis of Cross Section and Panel Data*. Second Edition. Cambridge, MA: MIT Press; 2011.
- Yashar, Deborah J. *Contesting Citizenship in Latin America: The Rise of Indigenous Movements and the Postliberal Challenge*. Cambridge: Cambridge University Press; 2005.
- Zolberg, Aristide R.; Woon, Long Litt. Why Islam is Like Spanish: Cultural Incorporation in Europe and the United States. *Politics & Society*. 1999; 27:5–38.

Figure 1.
Percent classified as indigenous based on language proficiency and proxy self-identification by age group

Figure 2.

Percent children of indigenous parents classified as indigenous by years of education of mother

^a Note: Sample limited to children whose parents are both classified as indigenous to control for the higher rate of intermarriage for mothers with more education.

Table 1

Descriptive Statistics for all Variables

	All	Language Proficiency Of Child		Proxy Self-Ident. Of Child	
		Yes	No	Yes	No
Female child	49.3	49.7	49.3	49.5	49.2
Ave. age of child	10.0	10.2	10.0	10.0	10.0
Child in grade-appropriate level	88.8	74.2	89.8	82.5	90.0
Ave. years of education of mother	8.1	3.3	8.4	5.5	8.5
Ave. years of education of father	8.3	4.1	8.6	6.1	8.8
Ave. household income (pesos per month)	8,415	2,247	8,792	4,729	9,081
Ave. age of mother	36.1	36.6	36.1	36.1	36.1
Ave. age of father	39.5	40.4	39.4	39.7	39.4
Mother migrant	21.9	4.1	23.0	12.6	23.6
Father migrant	22.3	3.9	23.6	12.0	24.3
Language proficiency of mother					
Does not speak indigenous language	81.2	2.0	86.6	45.0	88.4
Speaks an indigenous language	8.9	89.0	3.6	45.8	1.8
Not present in household	9.8	9.0	9.7	9.2	9.7
Language proficiency of father					
Does not speak indigenous language	65.9	1.8	70.2	35.9	71.8
Speaks an indigenous language	8.3	79.8	3.6	41.9	1.9
Not present in household	25.7	18.3	26.1	22.2	26.2
Self-identification of mother					
Not indigenous	73.3	2.4	78.1	3.5	87.1
Indigenous	16.5	88.3	11.8	87.2	3.0
Not present in household	9.8	9.0	9.7	9.2	9.7
Self-identification of father					
Not indigenous	60.0	2.2	63.9	4.8	70.8
Indigenous	14.0	79.2	9.7	72.8	2.8
Not present in household	25.7	18.3	26.1	22.2	26.2

	All	Language Proficiency Of Child		Proxy Self-Ident. Of Child	
		Yes	No	Yes	No
Mun. pop. speaks indig. language (ave.)	8.2	67.1	4.4	36.1	2.9
Mun. pop. considered indigenous (ave.)	16.8	78.4	12.8	54.7	9.6
Municipality with indigenous school	33.1	91.7	29.3	69.7	26.2
Size of locality					
Less than 2,500 (rural)	26.9	76.7	23.7	53.8	21.9
2,500 to 14,999 residents (low urban)	15.2	17.2	15.1	20.7	14.2
15,000 to 99,999 residents (med urban)	15.0	3.1	15.8	10.9	15.8
100,000 residents or more (high urban)	42.9	3.0	45.4	14.6	48.1
Region					
Northwest	9.3	1.6	9.8	3.8	10.4
Northeast	11.8	2.1	12.4	2.8	13.5
Center	31.9	15.9	33.0	28.9	32.5
Center-west	22.2	8.1	23.1	12.0	24.2
South	24.8	72.3	21.7	52.6	19.5

Notes: All numbers expressed as percentages unless otherwise noted. Sampling weights used in all calculations.

Table 2

Random Effects Logit Models Predicting Children's Indigenous Classification based on Language Proficiency by Characteristics of Mothers and Fathers

	Mothers				Fathers			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Female child	0.008 (0.023)	0.016 (0.024)	0.020 (0.025)	0.020 (0.025)	-0.011 (0.024)	-0.025 (0.025)	-0.017 (0.026)	-0.018 (0.026)
Age of child	0.034** (0.005)	0.032** (0.005)	0.054** (0.005)	0.054** (0.005)	0.042** (0.005)	0.040** (0.005)	0.062** (0.005)	0.062** (0.005)
Parent's education								
Years of education	-0.139** (0.006)	-0.117** (0.006)	-0.115** (0.006)	-0.106** (0.008)	-0.138** (0.005)	-0.107** (0.006)	-0.101** (0.006)	-0.087** (0.007)
Years of education * low urban				-0.038** (0.011)				-0.039** (0.010)
Years of education * med urban				0.005 (0.022)				-0.013 (0.016)
Years of education * high urban				0.008 (0.026)				-0.013 (0.028)
Age of parent			-0.015** (0.002)	-0.015** (0.002)			-0.014** (0.002)	-0.013** (0.002)
Parent migrant			-0.384** (0.113)	-0.380** (0.113)			-0.209 (0.141)	-0.209 (0.141)
Language of other parent								
Speaks an indigenous language	2.778** (0.096)	2.686** (0.094)	2.686** (0.094)	2.687** (0.094)		3.667** (0.074)	3.601** (0.074)	3.598** (0.073)
Not known	2.086** (0.537)	1.973** (0.454)	1.973** (0.454)	1.968** (0.456)		3.534** (0.560)	3.459** (0.574)	3.480** (0.581)
Not present in household	2.159** (0.094)	2.166** (0.095)	2.166** (0.095)	2.167** (0.095)		3.409** (0.122)	3.397** (0.127)	3.398** (0.128)
Prop. mun. pop. indigenous			3.379** (0.187)	3.379** (0.188)			3.472** (0.190)	3.468** (0.190)
Mun. with indigenous school			0.365** (0.139)	0.367** (0.140)			0.406** (0.148)	0.405** (0.148)
Size of locality								
2,500 to 14,999 residents (low urban)			-0.803** (0.099)	-0.638** (0.120)			-0.813** (0.106)	-0.612** (0.123)

	Mothers				Fathers			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
15,000 to 99,999 residents (med urban)			-1.933** (0.215)	-1.963** (0.247)			-1.953** (0.223)	-1.893** (0.265)
100,000 residents or more (high urban)			-1.422** (0.236)	-1.461** (0.219)			-1.629** (0.204)	-1.563** (0.178)
Region								
Northeast			0.914** (0.342)	0.907** (0.342)			0.504 (0.331)	0.499 (0.330)
Center			1.132** (0.254)	1.119** (0.256)			0.965** (0.279)	0.966** (0.279)
Center-west			-0.144 (0.134)	-0.150 (0.134)			-0.098 (0.141)	-0.103 (0.141)
South			1.441** (0.282)	1.440** (0.281)			0.957** (0.204)	0.955** (0.204)
Constant	-1.168** (0.104)	-3.358** (0.114)	-3.069** (0.172)	-3.111** (0.172)	-1.423** (0.097)	-4.342** (0.110)	-4.065** (0.175)	-4.142** (0.174)
Variance component (level 2)	3.509**	3.214**	1.704**	1.708**	3.671**	3.356**	1.671**	1.675**
n	266,076	266,076	266,076	266,076	244,425	244,425	244,425	244,425

Notes: Only one child from each mother and each father is chosen at random to avoid overweighting population groups with higher fertility rates. Samples are restricted to cases where the mother or the father is the census informant.

* p<.05

** p<.01 (two-tailed tests)

Table 3

Random Effects Logit Models Predicting Children's Indigenous Classification based on Proxy Self-identification by Characteristics of Mothers and Fathers

	Mothers				Fathers			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Female child	0.006 (0.022)	0.012 (0.025)	0.017 (0.025)	0.016 (0.025)	0.021 (0.026)	0.013 (0.030)	0.014 (0.030)	0.012 (0.030)
Age of child	-0.003 (0.004)	-0.006 (0.004)	0.012* (0.005)	0.013** (0.005)	-0.014** (0.004)	-0.014** (0.005)	0.004 (0.005)	0.005 (0.005)
Parent's education								
Years of education	0.010 (0.006)	0.019** (0.006)	0.025** (0.005)	-0.021** (0.007)	-0.015** (0.005)	0.005 (0.006)	0.012* (0.006)	-0.019** (0.007)
Years of education * low urban				0.023** (0.009)				0.005 (0.009)
Years of education * med urban				0.043** (0.010)				0.041** (0.011)
Years of education * high urban				0.082** (0.012)				0.063** (0.014)
Age of parent			-0.014** (0.002)	-0.017** (0.002)			-0.015** (0.002)	-0.016** (0.002)
Parent migrant			-0.455** (0.053)	-0.431** (0.051)			-0.479** (0.058)	-0.465** (0.056)
Ethnicity of other parent								
Other parent Indigenous	2.260** (0.049)	2.216** (0.047)	2.216** (0.047)	2.216** (0.047)		3.608** (0.059)	3.574** (0.058)	3.574** (0.058)
Not known	1.404** (0.210)	1.370** (0.217)	1.370** (0.217)	1.372** (0.216)		2.109** (0.234)	2.077** (0.228)	2.080** (0.231)
Not present in household	1.513** (0.050)	1.516** (0.049)	1.516** (0.049)	1.513** (0.049)		2.701** (0.106)	2.738** (0.105)	2.737** (0.105)
Prop. mun. pop. indigenous		2.263** (0.101)		2.250** (0.102)		2.100** (0.102)		2.100** (0.102)
Mun. with indigenous school		-0.109 (0.064)		-0.125 (0.064)		-0.077 (0.065)		-0.088 (0.065)
Size of locality								

	Mothers				Fathers			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
2,500 to 14,999 residents (low urban)			-0.307** (0.058)	-0.408** (0.082)			-0.295** (0.060)	-0.286** (0.092)
15,000 to 99,999 residents (med urban)			-0.680** (0.099)	-0.910** (0.129)			-0.628** (0.111)	-0.882** (0.133)
100,000 residents or more (high urban)			-0.810** (0.082)	-1.364** (0.116)			-0.772** (0.100)	-1.238** (0.125)
Region								
Northeast			0.227* (0.109)	0.234* (0.109)			0.223* (0.112)	0.223* (0.113)
Center			0.147 (0.142)	0.139 (0.143)			0.120 (0.148)	0.109 (0.148)
Center-west			0.101 (0.062)	0.117 (0.062)			0.063 (0.065)	0.076 (0.064)
South			0.472** (0.074)	0.484** (0.075)			0.521** (0.078)	0.518** (0.078)
Constant	1.319** (0.080)	-0.353** (0.075)	-0.191 (0.112)	0.128 (0.111)	1.427** (0.081)	-1.478** (0.084)	-1.275** (0.125)	-1.041** (0.124)
Variance component (level 2)	1.431**	1.149**	0.474**	0.472**	1.376**	1.124**	0.475**	0.471**
n	382,999	382,999	382,999	382,999	335,615	335,615	335,615	335,615

Notes: Only one child from each mother and each father is chosen at random to avoid overweighing population groups with higher fertility rates. Samples are restricted to cases where the mother or the father is the census informant.

* p<.05

** p<.01 (two-tailed tests)

Table 4

Fixed Effects Linear Probability Models Predicting Children's Indigenous Classification based on Language Proficiency and Proxy Self-identification by Characteristics of Mothers

	Based on Language Proficiency		Based on Proxy Self-identification	
	Model 1	Model 2	Model 1	Model 2
Female child	0.004 (0.003)	0.003 (0.003)	0.002 (0.003)	0.002 (0.003)
Age of child	0.006** (0.001)	0.006** (0.001)	0.001* (0.000)	0.001* (0.000)
Mother's education				
Years of education	-0.013** (0.001)	-0.013** (0.001)	0.003** (0.001)	-0.001** (0.000)
Years of education * low urban		-0.006** (0.001)		0.002* (0.001)
Years of education * med urban		0.002 (0.003)		0.004** (0.001)
Years of education * high urban		0.008* (0.003)		0.012** (0.002)
Age of mother	-0.002** (0.000)	-0.002** (0.000)	-0.001** (0.000)	-0.002** (0.000)
Mother migrant	-0.056** (0.014)	-0.052** (0.014)	-0.067** (0.009)	-0.063** (0.008)
Language/Ethnicity of father				
Father indigenous	0.267** (0.013)	0.268** (0.013)	0.406** (0.008)	0.405** (0.008)
Not known	0.149* (0.063)	0.141* (0.067)	0.300** (0.030)	0.300** (0.030)
Not present in household	0.193** (0.013)	0.194** (0.013)	0.327** (0.009)	0.326** (0.009)
Size of locality				
2,500 to 14,999 residents (low urban)	-0.107** (0.014)	-0.079** (0.015)	-0.023** (0.005)	-0.028** (0.006)
15,000 to 99,999 residents (med urban)	-0.298** (0.035)	-0.311** (0.040)	-0.075** (0.011)	-0.099** (0.015)
100,000 residents or more (high urban)	-0.200** (0.043)	-0.250** (0.035)	-0.113** (0.014)	-0.203** (0.020)
Constant	0.486** (0.015)	0.488** (0.015)	0.545** (0.011)	0.577** (0.010)
R-squared	0.5358	0.5367	0.2760	0.2782
N	266,076	266,076	382,999	382,999

Notes: Only one child from each mother is chosen at random. Samples are restricted to cases where the mother or father is the census informant.

*
p<.05

**
p<.01 (two-tailed tests)

Table 5

Random Effects Logit Models Predicting Children's Odds of Being in a Grade-appropriate Level using Language Proficiency and Proxy Self-identification as Criteria for Indigenous Classification for Mother and Child

	Based on Language Proficiency					Based on Proxy Self-identification				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Female child	0.334** (0.017)	0.334** (0.017)	0.334** (0.017)	0.348** (0.019)	0.350** (0.021)	0.333** (0.017)	0.333** (0.017)	0.333** (0.017)	0.347** (0.018)	0.349** (0.021)
Age of child	-0.218** (0.004)	-0.218** (0.004)	-0.218** (0.004)	-0.218** (0.004)	-0.220** (0.004)	-0.218** (0.004)	-0.218** (0.004)	-0.218** (0.004)	-0.218** (0.004)	-0.220** (0.004)
Mother indigenous	-0.490** (0.030)		-0.370** (0.033)	-0.012 (0.031)	-0.015 (0.032)	-0.250** (0.026)		-0.267** (0.034)	-0.067* (0.032)	-0.063 (0.032)
Child indigenous		-0.562** (0.041)	-0.394** (0.043)	-0.306** (0.042)	-0.321** (0.045)		-0.160** (0.023)	0.026 (0.030)	-0.012 (0.032)	-0.014 (0.034)
Ave. parents years of education				0.189** (0.004)	0.192** (0.004)				0.190** (0.004)	0.193** (0.004)
Log monthly household income					-0.012* (0.005)					-0.010* (0.005)
Age of mother	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.015** (0.001)	0.015** (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.015** (0.001)	0.015** (0.001)
Mother migrant	0.001 (0.025)	-0.009 (0.025)	-0.003 (0.025)	0.000 (0.026)	0.006 (0.028)	-0.004 (0.025)	-0.008 (0.025)	-0.003 (0.025)	0.003 (0.026)	0.009 (0.028)
Language/Ethnicity of father										
Father indigenous	-0.232** (0.029)	-0.309** (0.028)	-0.173** (0.028)	-0.064* (0.029)	-0.039 (0.032)	-0.118** (0.026)	-0.187** (0.025)	-0.123** (0.026)	-0.055 (0.028)	-0.053 (0.030)
Not known	-0.401 (0.289)	-0.397 (0.290)	-0.392 (0.290)	-0.345 (0.291)	-0.397 (0.315)	-0.071 (0.203)	-0.095 (0.205)	-0.072 (0.203)	0.017 (0.180)	0.029 (0.199)
Not present in household	-0.347** (0.016)	-0.354** (0.015)	-0.342** (0.016)	-0.273** (0.016)	-0.299** (0.017)	-0.338** (0.016)	-0.352** (0.016)	-0.339** (0.016)	-0.272** (0.017)	-0.301** (0.018)
Prop. mun. pop. indigenous	0.168* (0.070)	0.217** (0.072)	0.343** (0.074)	0.098 (0.058)	0.064 (0.061)	0.045 (0.058)	0.005 (0.058)	0.040 (0.058)	-0.013 (0.046)	-0.024 (0.048)
Mun. with indigenous school	-0.029 (0.034)	-0.042 (0.034)	-0.036 (0.034)	0.045 (0.027)	0.044 (0.027)	-0.068* (0.035)	-0.070* (0.034)	-0.068* (0.035)	0.036 (0.027)	0.034 (0.027)
Size of locality										
2,500 to 14,999 residents	0.301** (0.045)	0.292** (0.045)	0.292** (0.045)	0.084* (0.043)	0.096 (0.051)	0.311** (0.045)	0.311** (0.045)	0.311** (0.045)	0.092* (0.042)	0.102* (0.051)

	Based on Language Proficiency					Based on Proxy Self-identification				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
15,000 to 99,999 residents	0.492** (0.048)	0.482** (0.049)	0.477** (0.049)	0.058 (0.054)	0.092 (0.062)	0.514** (0.048)	0.515** (0.048)	0.515** (0.048)	0.073 (0.053)	0.105 (0.062)
100,000 residents or more	0.624** (0.047)	0.623** (0.047)	0.615** (0.047)	0.023 (0.047)	0.050 (0.053)	0.640** (0.048)	0.642** (0.048)	0.640** (0.048)	0.029 (0.048)	0.054 (0.053)
Region										
Northeast	0.495** (0.051)	0.509** (0.05)	0.505** (0.051)	0.315** (0.046)	0.323** (0.046)	0.518** (0.053)	0.520** (0.053)	0.517** (0.053)	0.315** (0.046)	0.323** (0.046)
Center	0.400** (0.054)	0.416** (0.053)	0.413** (0.053)	0.295** (0.044)	0.301** (0.046)	0.403** (0.055)	0.405** (0.055)	0.403** (0.055)	0.286** (0.044)	0.291** (0.046)
Center-west	0.527** (0.036)	0.529** (0.036)	0.530** (0.036)	0.425** (0.030)	0.423** (0.030)	0.548** (0.036)	0.547** (0.036)	0.548** (0.036)	0.432** (0.030)	0.430** (0.030)
South	0.168** (0.045)	0.185** (0.045)	0.181** (0.045)	0.189** (0.044)	0.188** (0.045)	0.184** (0.045)	0.186** (0.045)	0.183** (0.045)	0.187** (0.043)	0.184** (0.044)
Constant	3.873** (0.063)	3.874** (0.063)	3.868** (0.063)	2.238** (0.061)	2.307** (0.060)	3.893** (0.065)	3.895** (0.065)	3.893** (0.065)	2.234** (0.062)	2.289** (0.061)
Variance component (level 2)	0.162**	0.158**	0.159**	0.099**	0.098**	0.166**	0.165**	0.166**	0.101**	0.101**
n	962,230	962,230	962,230	962,230	832,562	962,230	962,230	962,230	962,230	832,562

Notes: Only one child from each mother is chosen at random to avoid overweighting population groups with higher fertility rates.

*
p<.05

**
p<.01 (two-tailed tests)