

Explaining group differences in ethnic intermarriage: A comparative analysis of immigrant children in the United States

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Introduction

Much has been written about the degree to which the members of immigrant (or ‘ethnic’) groups marry outside their group, either with other ethnic groups or with members of the host society. Ethnic intermarriage—or its reverse, endogamy—is an important issue for several reasons (Alba and Nee 2003; Hwang, Saenz, and Aguirre 1997; Kalmijn 1998; Pagnini and Morgan 1990; Qian and Lichter 2007). First, it has been argued that intermarriage is an attractive behavioral indicator of the degree to which different groups in society accept each other as equals. Second, intermarriage is a form of interaction between groups because it connects not only the two spouses, but also the different social networks to which they belong. Third, intermarriage may reduce ethnic identities and prejudice in the long term because the children of mixed marriages are less likely to identify themselves with a single group. High rates of intermarriage also make it more difficult to delineate the boundaries of ethnic groups, thereby weakening the salience of ethnic definitions in society (Davis 1991).

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Although the trends and individual determinants of ethnic intermarriage and endogamy have often been studied, much less is known about why ethnic groups differ in their marriage choices. Some groups marry more often inside the group than other groups (Lieberson and Waters 1988). European groups, for example, have lower rates of endogamy than non-European groups (Lieberson and Waters 1988). Among the non-European subgroups, there is also variation, although this appears not so much between regions (e.g., Asians versus Hispanics), but more between origin countries within regions (Jacobs and Labov 2002).

Although there are large differences in endogamy between groups, little is known about how such differences arise. One potentially important explanation lies in structural factors. Differences in endogamy can be related to opportunities of finding a partner within the own ethnic group (Blau, Blum, and Schwartz 1982; Blum 1985). Opportunities for meeting and mating are also governed by other factors which vary across groups, such as the sex ratio, and the geographic dispersion of a group. While such structural factors may well be important for explaining group differences, empirical research has been based on comparisons within rather than between groups. The classic and influential studies by Blau and his colleagues (Blau and Schwartz 1984; Blum 1985) were all based on comparisons of immigrants (as a group) across SMSA's. Later studies examining structural determinants of ethnic intermarriage have compared one or a few groups across regions (Anderson and Saenz 1994; Hwang, Saenz, and Aguirre 1997; Hwang, Saenz, and Aguirre 1994). Few studies have examined whether structural differences can also explain *group* differences in ethnic endogamy.

Another potentially important explanation of group differences in ethnic endogamy lies in cultural factors. Some groups are culturally more distant from American culture and could therefore be less attracted to marrying native Americans and could also be faced with more prejudice from potential native American marriage candidates. In some groups norms of endogamy are stronger because there is more third party control of marriage choices. This can also be an important source of variation in endogamy across groups.

Related to this is that groups vary in the degree to which their members identify with the group. A strong sense of belonging to the group is believed to be an important impediment to intermarriage. Such 'cultural' explanations are often invoked to explain endogamy and consequently, high levels of endogamy have often been interpreted in terms of concepts such as cultural distance, ingroup preferences, and norms of endogamy. Few studies, however, have tested these notions in a systematic comparative study and have examined these factors net of the role of structural factors.

One exception is Lieberman and Waters' seminal book on ethnic relations in the United States based on the 1980 Census. Lieberman and Waters introduced a comparative design by presenting bivariate correlations between group traits and rates of intermarriage for 22 ethnic groups (Lieberman and Waters 1988). Although Lieberman and Waters' analysis remained a pure macro-level study and did not delve into multivariate analyses, it was one of the first attempts to explain differences in intermarriage among groups with a multitude of hypotheses. More recent comparative studies are descriptive in nature. Some authors compare subgroups within larger ethnic-racial groups, such as Asian American subgroups (Hwang, Saenz, and Aguirre 1997; Qian, Blair, and Ruf 2001), Hispanic American subgroups (Qian and Cobas 2004), or Black American subgroups (Batson, Qian, and Lichter 2006). There is also research comparing the larger groups, i.e., Blacks, Asians, Hispanics, American Indians, and whites (Qian and Lichter 2007).

In sum, intermarriage is an important indicator of assimilation and integration, and in that sense, an important way to examine how different groups fare in the host society. Despite the considerable amount of research that has been done on intermarriage, however, research has not sufficiently established the contextual factors which can explain differences in intermarriage and studies have not yet been able to systematically distinguish cultural from structural forces in understanding these differences (Alba and Nee 2006, p. 267).

There are several reasons why the comparative perspective has not yet been developed in the literature on intermarriage. One reason is that the literature has often used loglinear

models. Such models are well-suited to control for group size and they use a two-sided perspective on intermarriage, with information on husbands and wives simultaneously. A disadvantage of loglinear models is that they do not easily allow the inclusion of covariates. The use of these models therefore has the unintended consequence that no explanatory tradition of research has been developed (Kalmijn 1998). In a sense, the loglinear approach has resulted in an increasingly detailed *description* of marriage patterns, and not in an increasingly informative explanation.

Another reason for the poorly developed tradition of comparative research on intermarriage is that many studies focus on the problems of widely debated specific groups, in particular Hispanic Americans (Anderson and Saenz 1994; Gilbertson, Fitzpatrick, and Lijun 1996; Qian and Cobas 2004), Asian Americans (Hwang, Saenz, and Aguirre 1997; Lee and Yamanaka 1990; Lee and Fernandez 1998; Qian, Blair, and Ruf 2001; Sung 1990), and Irish Americans (Hout and Goldstein 1994). These groups are obviously important for understanding contemporary ethnic relations in the United States and therefore require special attention in social research. From a theoretical point of view, however, these groups are no more important than all the other groups which entered the United States. Hence, a focus on these highly visible groups does not yield a representative picture of the determinants of intermarriage. Moreover, the focus on a single group entails the risk of emphasizing what is unique about them and this can lead to ad-hoc theorizing.

To understand why a certain group has a low rate of intermarriage, theories need to be formulated which apply to any ethnic group. To subsequently test such theories, groups need to be compared with different levels of intermarriage. And because there is always more than one possible theory of any difference in intermarriage, the number of groups must be relatively large. For this reason, we chose the United States as our research setting. The United States is an ideal country for testing macro-level theories about intermarriage because of its large number of immigrant groups. The data we use allow us to compare the marriage choices of individuals from 95 ethnic groups in the United States. The groups are quite diverse. Some are large (Mexicans), others are small (Costa

Ricans). Some groups are predominantly white whereas other groups are predominantly black (Haitians). All religions are represented, including Muslim groups (Iranians), Catholic groups (Italians), Orthodox groups (Greeks), Jewish groups (Israelis), and Protestant groups (Swedes). All world regions are represented as well, although immigrants from Africa and the Middle East constitute a relatively small number. Also interesting to observe are the different ‘ages’ of groups. The sample contains ‘old’ immigrant groups such as the English, ‘new’ immigrant groups such as the Italians, and obviously also all the recent groups such as Mexicans and Asians. We should keep in mind, however, that recent cohorts of the older groups may not necessarily behave in the same way as these groups did when they experienced their immigration peak.

The data are analyzed with multilevel models where individuals are nested in groups. Whether or not a person marries within or outside the group is regarded as a function of individual characteristics on the one hand, and group characteristics on the other hand. Some group characteristics are defined in terms of the characteristics of the groups as they are in the United States, other group characteristics are defined by characteristics of the sending countries. By using a multilevel design, we are able to control for individual effects and in doing so, we control for compositional differences between groups (i.e., educational differences). The multilevel design also yields less biased standard errors and *p*-values for the group effects, which would be underestimated in a normal regression design.

The analysis is based on pooled data from the integrated Current Population Survey data from 1994-2006. An advantage of these data is that they contain information on the country of birth of the respondents and their parents. This allows us to look at the second generation, something that is not possible with census data (in 1980, the question on the parents’ place of birth was omitted from the census). Most recent analyses of census data, have therefore focused on immigrants, so that little is yet known about the intermarriage patterns of the second generation. Note that older census studies did include the second generation (Kalmijn 1993a; Pagnini and Morgan 1990). We also look at immigrants, but it has been noted that many immigrants came to the U.S. while being married (Hwang

and Saenz 1990). Without knowing the age at marriage, this problem cannot be solved. As an alternative, we will focus on immigrants who entered as children. People who entered the U.S. before the age of 18 are generally immigrating with their parents and still single. In sum, we look at second generation and child immigrants and we use the term *immigrant children* to refer to these two groups in combination. We subsequently assess whether they are married, and if so, whether the spouse is from the own group (first or second generation), or from another group. Because marriages outside the group can either be with natives (i.e., native-born persons of native-born parents) or with other ethnic groups, we use a three-category outcome variable and we also present hypotheses for marrying with other ethnic groups.

Hypotheses

Intermarriage is often explained in terms of three general notions: individual preferences to marry within or outside the group, structural opportunities to meet members of the own group, and the influence of third parties on marriage behavior (Kalmijn 1998). These notions can also be used to explain why people marry endogamously. For example, several ethnic groups may be faced with prejudice from potential marriage candidates (individual preferences), they may live in ethnically homogeneous neighborhoods (meeting opportunities), and their church may oppose outmarriage (third party influence).

When the aim is to explain *group* differences in intermarriage, the distinction between individual preferences and third party influences becomes somewhat academic. We therefore present a two-fold distinction in our hypotheses: *structural* arguments that address the opportunities that people have to intermarriage, and *cultural* arguments that relate to the norms, values, and preferences that people have regarding interaction and marriage with members of other groups. This distinction is quite important because it allows us to qualify the very meaning of intermarriage in society. To the extent that intermarriage is a function of structural factors, it seems less valid to regard intermarriage as an indicator of the degree to which groups accept each other in the social sphere.

In formulating hypotheses, we make a distinction between two outcomes: marrying within the group, which is called endogamy, and marrying with other ethnic groups when a person does not marry within the group. Our results show that this form of mixing between ethnic groups is common and it is therefore important to also formulate hypotheses about the determinants of this form of intermarriage. We will do this in a separate section. Ethnic mixing is also important in light of current debates about pan-ethnic identities.

A caveat is that we define ethnic groups on the basis of countries—in essence, we analyze ancestry groups. In many cases, ethnic groups overlap with a nation because national identities can form the basis of an ethnic identity. Ethnic groups are also defined by common religious, cultural, and linguistic characteristics. For that reason, there will be no one-to-one correspondence between nation and ethnic group. Different religious groups within a country can form different ethnic groups. Although we cannot develop more sophisticated ethnic measures, we try to take this into account by looking at ethnic heterogeneity within national ancestry groups (see below).

Hypotheses about Cultural Characteristics

A first characteristic of ethnic groups is the practice of arranged marriages in the sending country. The degree to which parents and other family members are involved in the marriage process typically varies from country to country. In countries like India, Pakistan or Saudi-Arabia, for example, parents often have an important role in selecting possible candidates to their children, particularly to daughters (Goode 1963). The important question, then, is whether such cultural practices are maintained when people migrate to the United States, where individuals are free to choose with whom they want to marry. We assume that, despite the more general norm of individual-based marriages that prevails in the U.S., ethnic groups differ in their cultural heritage of arranged marriages, and such practices determine the marital behavior of immigrant children. Thus, it is expected that *the more strongly the practice of arranged marriages in the country of origin, the more likely immigrant children are to marry endogamously.*

The religious orientation of ethnic groups can provide a barrier to ethnic intermarriage (Kennedy, 1944, 1952; Lieberman and Waters, 1988). Religion is a core element of culture, since it is associated with cultural values, beliefs and practices, and previous research has shown that religion plays a major role in marital choices (Greeley, 1970; Kalmijn, 1991; Kalmijn and Van Tubergen 2006; Lehrer, 1998; Sherkat, 2004). The United States attracts people from all nations, leading to a highly diverse ethnic population, also in terms of religious background. As a mainly Protestant-Catholic country, it receives ethnic groups that are mainly Muslim, Hindu, Buddhist, Orthodox or that have another religion. This means that some ethnic groups are religiously different from that of the Christian majority. Naturally, people's own religion could differ from that of the majority religion in a group. However, this possibility does not affect how the native population perceives the ethnic group, and as such acts towards that group. We hypothesize that *immigrant children who come from predominantly non-Christian countries are more likely to marry endogamously*. In more detailed analyses, we look at different non-Christian denominations but we have no hypothesis about possible differences in endogamy.

Another cultural aspect of ethnic groups is their language origin, which could affect ethnic intermarriage as well (Hwang, Saenz, and Aguirre, 1997; Stevens and Swicegood, 1987; Tzeng, 2000; Kulczyk and Lobo, 2002). Groups from English-speaking nations will have more contacts with the native population than ethnic groups with a different language background. These differences among first-generation immigrants could affect the marital behavior of their children. Although young immigrants (i.e., those who arrived before 18 years of age) and second generation immigrants speak the English language very well as they grow older (Chiswick and Miller 19xx; Stevens 1999), people use their mother tongue frequently as well. We therefore assume that immigrant children prefer a spouse who speaks the same non-English mother tongue. Such a partner could communicate with their own parents, or with friends from the same ethnic group. Thus, it is expected that *immigrant children who come from non-English speaking countries and*

especially from countries with languages that are more different from English, are more likely to marry endogamously.

Besides looking at arranged marriages, and religious and linguistic barriers, we also examine whether ethnic group differences in intermarriage can be linked to the international orientation of the home country. Some countries are strongly focused on the own nation, exemplified by a strongly nationally oriented economy, culture, technology and governance. By contrast, other countries participate more strongly in the process of globalization, thereby less emphasizing national boundaries. Naturally, immigrants who move to the United States already express this international orientation. Nevertheless, ethnic groups differ in the way they were socialized in an international worldview, and we assume that such an outlook is transmitted to their children. We hypothesize that *immigrant children who come from countries that more strongly participate in the globalization process are less likely to marry endogamously.* Note that an international orientation in the home country is often also an orientation toward the United States. Economic measures of globalization of countries depend on trade and much trade is with the United States. Cultural measures of globalization typically include indicators of the importance of English-language products (e.g., books, music) and are therefore also measures of ‘Americanization.’

Hypotheses about Structural Characteristics

Ethnic group differences in intermarriage can also be the result of structural characteristics. First and foremost, researchers have argued that the size and residential segregation of an ethnic group is important (Anderson and Saenz, 1994; Hwang, Saenz, and Aguirre, 1997; Lieberson and Waters, 1988; Lievens, 1998; Stevens and Swicegood, 1987). The size of an immigrant community influences people’s daily opportunities of meeting members of the own group and those of other groups (Blau and Schwartz, 1984). Members of larger groups more often meet group members and for that reason, are more likely to marry endogamously. Although groups vary in size, there is also regional variation (Lieberson and Waters 1988). In some states, a certain group is represented

more strongly than in another state. Mexican Americans, for example, are the second group after natives in California, but they are a very small group in the Midwest. For this reason, we consider both variations across states and groups by looking at the presence of co-ethnics in the state of residence. Thus, it is expected that *the larger the number of fellow-members in a state, the more likely immigrant children are to marry endogamously*. Analytically, we will also separate the effects of state-level and group-level variation by constructing a measure of size for groups and a measure of state-specific deviations from the average group size.

The sex-ratio is expected to affect intermarriage as well (Anderson and Saenz, 1994; Hwang, Saenz and Aguirre, 1997; Pagnini and Morgan, 1990). A shortage of marriageable co-ethnics of the opposing sex naturally constitutes a structural force towards outmarriage (Blau and Schwartz, 1984). Hence, we hypothesize that *the more skewed the sex ratio in an ethnic group in a state, the less likely immigrants children are to marry endogamously*. This hypothesis will also be examined in a sex-specific manner but we have no hypothesis about this difference.

Considering only the size of an ethnic group and its sex ratio would ignore the economic and social boundaries that exist *within* ethnic groups, and the importance of such cleavages as a structural force towards outmarriage (Anderson and Saenz, 1994; Hwang, Saenz, and Aguirre, 1997; Lievens, 1998). Assuming that people prefer to interact with others who are similar, diversity of an immigrant group lowers the chances of meeting an attractive co-ethnic spouse, thereby promoting exogamy (Blau and Schwartz, 1984).

People tend to marry a co-ethnic with a similar socioeconomic status (Kalmijn, 1998). The availability of potential spouses with the same socioeconomic position, however, differs within and between groups, depending on both the socioeconomic composition of the group and people's own socioeconomic status (Lehrer, 1998). In lower educated ethnic groups, immigrants with a high education have more difficulties finding an equally (high) educated co-ethnic spouse than low educated immigrants, leading the higher educated to search for potential partners outside the own ethnic group (Furtado, 2006). In

higher educated groups, the situation is exactly opposite. Taking these ideas together, and focusing on education as a core element of socioeconomic status, we hypothesize that *the higher the percentage within the own ethnic group that has the same education as an immigrant child of that group, the more likely that immigrant child is to marry endogamously.*

Besides socio-economic differences within ethnic groups, there might also be a within-group boundary between first and second generation immigrants. Immigrants who arrived at a young age (i.e., before 18 years old) have more affinity with their country of origin than immigrant children who were born in the United States (i.e., the so-called ‘second generation’). Such differences in migration history and commitment to the home nation could result in separate marriage markets within the same ethnic group. Indeed, earlier research conducted in the United States has shown that first generation members of ethnic groups less often marry second generation members of ethnic groups than expected (Kalmijn 1993b; Pagnini and Morgan 1990). We therefore hypothesize that *the larger the share of the own generation in a group, the more likely immigrant children from are to marry endogamously.*

Hypothesis about Ethnic Diversity

Our last hypothesis about endogamy has to do with the definition of ethnicity. We used countries of origin to define ethnic groups but countries can be diverse in their ethnic composition. For example, the majority of the population in China are Han Chinese, but about 10 percent has another ethnic affiliation (e.g., Zhuang, Uygur). Yugoslavians are considered a group, but there are many underlying ethnic groups based on combinations of religious affiliation and regional heritage. Similarly, many African countries consist of a multitude of large ethnic groups which have strong social boundaries between them. One could argue that groups that are diverse ethnically will have a weak ethnic identity *as a group* and will therefore have a low degree of inmarriage. This does not mean that the underlying subgroups have weak preferences for endogamy, it only implies that *our* definition of that group makes it a ‘weak’ group. It should be noted that ethnic diversity

in the country of origin need not imply similar heterogeneity of immigrants from that country in the United States. However, as migration motives are predominantly related to economic incentives and have less to do with culture, we think that bias in this respect is modest. It is therefore expected that *immigrant children who come from countries that are more ethnically diverse are less likely to marry endogamously.*

Hypotheses about Ethnic Mixing

Thus far we have considered the opportunities to marry within the group. If immigrants marry outside the group, they can also marry not with natives but with members of other ethnic groups. Some of the characteristics we considered above may also affect ethnic mixing. For example, coming from a non-Christian country may increase the chances of marrying with other groups rather than with natives since most natives are Christian. Similarly, coming from an English speaking group will not only increase the chances of marrying outside the group, it will also increase the chances of marrying with native Americans rather than with other ethnic groups. Another example is the hypothesis about globalization. Groups from countries with a strong international orientation will not only be more likely to marry outside the group, but they will also be likely to marry with natives rather than with other groups. As discussed above, an international orientation is largely an orientation toward American culture.

There are also additional hypotheses about mixing. First, it is important to also formulate hypotheses about the chances of marrying with other groups. Our first hypothesis concerns the size of the other groups. We expect that *the larger the number of immigrants (outside the own group) in a state, the more likely it is that immigrants marry with other groups rather than with natives.*

Next, we believe that there are two main reasons *why* immigrant groups may mix: a common language and a common religion. For example, a Mexican American and an El Salvadorian may marry each other because they share a language and a religion. Similarly, people from Turkey and Iran may marry each other because they are both

Islamic. In a more general sense, one could argue that ethnic groups may mingle more often when there are no other cultural boundaries dividing the groups. Individual level research has indeed demonstrated the importance of linguistic and religious similarities for ethnic mixing in the . We therefore expect that *the larger the number of immigrants (outside the own group) who speak the same language (as the respondent), the more likely it is that immigrants marry with other groups rather than with natives*. Along the same lines, we expect that *the larger the number of immigrants (outside the own group) who have the same religion (as the respondent), the more likely it is that immigrants marry with other groups rather than with natives*.

We note that the last hypotheses are essentially mixed micro-macro level hypotheses since they are based on information about the respondent and his or her context (either his state or his group).

Individual Characteristics

Finally, we consider a set of individual characteristics which may influence the chances of marrying within or outside the group. First, we consider gender differences. The notion of third party control over marriage choices suggests that women are more likely to marry within the group than men. Women's demographic choices are more strongly controlled by parents and family members than men's demographic choices. Hence, there will be more pressure to marry within the group on women than on men. The rationale for this may be that parents tend to have a stronger tie to their daughters than to their sons. Because a mixed marriage may entail the risk of losing the ties with one's children, there is more to lose when a daughter marries outside the group. Our hypothesis is: *Women are more likely to marry endogamously than men*.

Our second hypothesis concerns the role of the respondent's origins. We make a distinction between first and second generation immigrants, although we should emphasize that the first generation that we consider all entered as a child (younger than age 18). Earlier research has found that first generation immigrants more frequently

marry endogamously than second generation immigrants (Blair and Ruf, 2001; Feliciano, 2001; Giorgas and Jones, 2002; Lievens, 1998; Pagnini and Morgan, 1990; Qian, 1999). For the second generation, we make an additional distinction between those who have two foreign born parents and those who have one foreign born parent and one native born parent. These latter are the children of mixed marriages. Because they have one native born parent, one would expect them to marry less often within the group than the second generation with two foreign born parents. Our hypothesis is: *the first generation is more endogamous than the second, and within the second generation, respondents with two foreign born parents are more endogamous than respondents with one foreign and one native born parent.*

We also consider the role of race by comparing ‘blacks’ and ‘others.’ Given the strong black-white boundary in the United States, this is a relevant variable. One would expect that black immigrants are less likely to marry outside the group, to a large extent because the majority of natives is white. Obviously, this also depends on the relative size of the black population in a state. We therefore formulate a main effects and an interaction hypothesis: *Black respondents are less likely to marry endogamously than whites and this difference is smaller when the relative size of the black population in a state is larger.*

Education has also been considered an important variable in the intermarriage literature (Hwang, Saenz and Aguirre, 1995; Kalmijn, 1993b; Kulcycki and Lobo, 2002; Lievens, 1998; Qian, Blair and Ruf, 2001). It is argued in the literature that educational attainment is generally associated with a weaker normative emphasis on ascription as a basis for evaluation in life (Kalmijn, 1998; Lieberman and Waters, 1988). Furthermore, it is maintained that higher education increases the opportunities for ethnic minorities to meet members of the out-group (Kalmijn, 1998; Lieberman and Waters, 1988). Higher educated immigrants participate in settings in which the presence of co-ethnics is generally small, such as universities and high-status occupations. We thus expect that *the higher the respondent’s education, the less likely it is that he or she marries endogamously.*

We also consider differences between birth cohorts. Some authors have argued that due to the transition from ascription to achievement, one would expect that over time, ethnicity would have become a less important factor in the marriage market (Kalmijn 1998). Cohort comparisons have not often been done, but some of these indeed show such a decline but these are based on specific ethnic groups. We note that we consider all groups. In comparing old and new immigrants, one needs to take into account that the ethnic composition of the groups has changed radically. Because we include a range of group characteristics, we believe such compositional effects are sufficiently covered. We still need to consider whether an additional within-group analyses is needed for estimating cohort effects. Our hypothesis is: Older immigrant cohorts are more likely to marry within the group than younger immigrant cohorts. Note that we control for the year of observation. Note also that marriage year would be a more attractive variable for estimating cohort effects but this is not available in the data.

Data and Measurement

Data are from the Current Population Survey, a one yearly-repeated nationally representative survey from the total population of the United States. We use the surveys conducted in the period between 1994 and 2006. From these surveys, we select all immigrants and all child immigrants who were between 21 and 89 years of age at the time of the survey ($N = 337,052$). We excluded immigrants from the U.S. outlying areas since there are no (good) country-level data for these groups ($n = 37,176$). We also excluded immigrants who arrived at age 18 or later since these may have entered the U.S. while they were already married ($n = 146,433$).² There were also some respondents whose origins were classified with unclear labels, such as 'Europe not specified.' These were also excluded ($n = 1,079$). Of the remaining respondents, 57 percent were married at the time of the survey, leaving $N = 85,647$ respondents for the analysis.³

² These criteria were applied to the respondent only, and not to the spouse. In the descriptive tables, they were applied to respondent and spouse. It would be better to also do this for the regression models.

³ Canada is excluded because of border-effects, but this needs to be reconsidered.

Ethnic groups were defined on the basis of country of birth. We used the respondent's country of birth (if born abroad), the father's country of birth (if native born), or the mother's country of birth (if native born with a native born father). One foreign born parent is enough to be defined as belonging to an ethnic group, but we will take this distinction (one or two foreign born parents) into account in the regression analyses. After excluding miscellaneous and unspecified groups, this yielded a total of 95 groups coming from all over the world (see Table 2). Some groups are very large, such as Mexicans, but most groups are actually quite well represented. In fact, 75 of the 95 groups have a sample size of more than 40 married persons (men plus women), which is about the size of class in secondary school (*cf.* multilevel analyses in educational research). The descriptive tables (Table 2) are based on the full sample, but for the multilevel logistic regression models, this was too large a sample. We therefore took a subsample for the regression analyses. Rather than simply sampling from the full sample, we took a random sample of 500 respondents from each group (for smaller group, the full sample was taken and for the sex-specific analysis, the sample size was 1000). This yields a sample of $N = 25,172$ ($N = 18,600$ men and $N = 17,917$ women in the sex-specific analysis). We believe this sampling scheme strengthens the test of the group effects compared to an unstratified sample because otherwise relatively small groups would be made even smaller, which weakens the statistical power to detect group-level effects.

The dependent variable consists of three categories: (a) a partner from the same ethnic group, (b) a partner from another ethnic group, (c) a native born partner with two native born parents. The group variable for the spouse was defined in the same manner as the group variable for the respondent. We use multilevel logistic regression models where individuals are nested within groups (estimated using STATA). Because a multinomial multilevel model was not available, we estimate two separate models. The first predicts the chances of marrying within the group rather than outside the group. The second model predicts the chances of marrying with another group rather than with a native born person, given that the respondent marries outside the group. Hence, the models are sequential.

Our analyses is one-sided, which means that we use respondent characteristics to ‘predict’ spouse characteristics. Persons and spouses are both represented as respondents in the CPS samples which means that some of the respondents in the analyses are married to each other (when the marriage is within the group or when it is with another ethnic group, in which case both partners are immigrant children). We will correct for this using clustered standard errors (still to do). We also present separate models for men and women and in these models, there will obviously be no linked respondents. In the past, loglinear analyses have frequently been used to analyze ethnic intermarriage from a dyadic (i.e., husband-wife) perspective (Kalmijn 1993a; Qian, Blair, and Ruf 2001), but the use of such models makes it problematic to include a large number of independent variables and also has no straightforward method for dealing with a multi-level structure. It has been noted that one-sided models, although methodologically less sophisticated than loglinear models, may be theoretically more promising because they allow the researcher to test a large number of hypotheses simultaneously (Kalmijn 2001).

Individual Measures

Education: measured as total years of schooling.

Race: we contrast blacks from all other groups, using information on self-identified race.

Birth year: the year of birth of the respondent.

Generation and nativity: we construct three groups (a) immigrants, (b) second generation with one native born parent, (c) second generation with two native born parents.

Immigrants are the reference category (these can also have native born parents, but this is ignored).

Cohabitation: to control for possible differences in marital behavior between formally married couples and otherwise cohabiting couples (Blackwell and Lichter 2004; Schoen and Weinick, 1993), we include a dummy variable representing this difference.⁴

⁴ Needs to be added. The current version only has married couples.

Contextual Measures

Arranged marriages: as a measure of the frequency of arranged marriages in the country of origin, we use the percentage of women married between 10 and 14 years of age, in the country of origin, between 1950 and 1990. Information was obtained from census data. We included the early period here because we want to assess whether there was a tradition of early marriage in a country. Examples of countries with high levels of teenage marriages are Ethiopia, Pakistan, Bangladesh, and Nigeria.

Non-Christian background: we measure whether the country of origin was predominantly non-Christian. Those countries with less than 50 percent Christian adherents in the 1960–1980 period were assumed to be predominantly non-Christian. This information was obtained from Brierley (1997). In addition, using other sources (e.g., www.adherents.com), we also explore empirically possible differences in ethnic intermarriage among the non-Christian population –as this might be a too heterogeneous category. We distinguish (1) Muslim, (2) Buddhist/Hindu, (3) Orthodox, (4) other.

Non-English background: indicates whether English is an official language in the country of origin (Grimes 2000).

Language distance: indicates the degree of linguistic distance of the origin language to English. This measure was developed by Chiswick and Miller in the context of language classes for foreign students (Chiswick and Miller 2005).

Globalization: rather than using economic (i.e., trade) measures of globalization, we use a cultural measure of globalization. This measure was developed by Dreher and is a combination of (a) the sum of import and export of books, (b) the number of Ikea stores per capita, (c) the number of McDonald's per capita (Dreher 2006). According to this index, the most globalized countries are Singapore, the Netherlands, Denmark, Switzerland, and Sweden (due to Ikea), and Czechoslovakia. The least globalized are Haiti, Bangladesh, Iran, Pakistan, and India.

Ethnic diversity: to analyze the ethnic diversity in the country of origin, we rely on the Index of Fractionalization, which measures the ethnic, linguistic and religious heterogeneity across countries (Alesina, Devleeschauwer, Easterly, Kurlat, and Wacziarg 2003). Examples of groups (origin countries) which are highly diverse can be found in

Africa (e.g., Nigeria), in Europe (e.g., Yugoslavia), and in Asia (e.g., Indonesia, Pakistan). Several South American countries are also quite diverse (e.g., Peru, Ecuador).

Group size: the percentage of the population of 15 years and older from a certain country of origin, measured at the group-state level (i.e., for each combination of group and state). We used the 1990 and 2000, 5% Public Use Census of Population, and averaged the scores for both years. In this way we get a more reliable estimate of group size and the measure is related to the period we analyze (i.e., 1994-2006).

Sex-ratio: The number of opposite-sex members divided by the number of same-sex members in a group. This was based on the CPS data. Sex ratio's of immigrant groups can be highly skewed. Examples of female dominant groups can be found in Northern Europe (Lithuania and Finland) and in the Caribbean (Dominica). Examples of male dominant groups are Saudi Arabia, Bangladesh, and Guatemala. We note that sex-ratios also tend to change over time. Because the analysis is already quite complex, we abstain from including a dynamic dimension (e.g., cohort) in our multilevel models.

Same education: measures the individual-specific percentage within an ethnic group that has the same educational level as the respondent. To match individual education with the educational composition of the ethnic group, we distinguish between (1) at most primary education, (2) secondary education, (3) tertiary education.

Same generation: measures the individual-specific percentage within an ethnic group that is of the same generation as the respondent. This would be equal to using the percentage of second generation for the second generation respondents and the percentage of first generation for the first generation. We will conduct additional analyses for the two generations to see if there is an interaction.

Foreign stock: measures the percentage in a state that is first or second generation immigrant. This measure is the same for all groups and only varies by state.

Own language outside group: measures the percentage of respondents in a state which speak the same language as the group to which the respondent belongs, excluding the members of his or her own group. For example, when considering Mexican Americans, the measure is 6.3 percent when the respondent lives in Florida and 0.3 percent when the respondent lives in Arizona. The measure also varies by group, even for groups who speak the same language. For example, for Mexican Americans the average score is 1.1

percent whereas for Costa Ricans, it is higher (4.0 percent) because they are faced with the large Mexican American group in the United States.

Own religion outside group: measures the percentage of respondents in a state which have the same (dominant) religion as the group to which the respondent belongs, excluding the members of his or her own group. Countries without a dominant religion (e.g., Protestant-Catholic countries) are treated as a separate mixed religion.

The correlation matrix of the macro-variables is presented in the appendix (using groups as the unit). We see that all correlations are well below .50, showing that there are no problems with multicollinearity.

Results

On average, 26 percent of immigrant men and 30 percent of immigrant women are married within the group. Considering the average size of ethnic groups on a state-level (1.5 percent, varying between 0 and 7 percent), endogamy far exceeds what one would expect on the basis of chance.⁵ We also see that a substantial number of immigrant children is married to a member of another ethnic group (23 percent of men and 23 percent of women). This too exceeds chance expectations, but less so than the level of endogamy. The average size of the foreign stock in a state is 10 percent.

Table 2 presents the percentages of men and women married within the group for each group separately. Since there are 96 groups, this table cannot easily be interpreted. Nevertheless, it is of some interest to look at the extremes. The most endogamous groups (in terms of percentages for men, and considering only groups for which $n > 40$) are Laos (79), Vietnam (68), Mexico (59), the Azores (53), India (44) and China (43). The least endogamous groups are Australia and New Zealand (no endogamy) and France, Panama, Argentina, Scotland, and Switzerland (all below 4).

⁵ The averages for size are obtained from an individual-level file. Averages would be lower for a macro-level file since states with small numbers of immigrants would receive the same weight as states with large numbers of immigrants.

Obviously, group size is such an important factor that the percentages in Table 2 cannot be interpreted as measures of ‘openness’ or ‘closure.’ These labels are used in a purely descriptive manner. More interesting is to examine which groups are more closed, given the relative size of their group. Odds ratio’s are one way of examining this. The last columns of Table 2 present for each group an odds ratio for marrying within rather than outside the group (with a native or another group). Standard errors are presented as well and odds ratio’s are not calculated for sparse tables (with cells $n < 10$). Groups that are most closed are again some of the Asian countries (Laos, Vietnam, Cambodia), but also countries like Iran and India. The most open countries are again the European countries, particularly in the west.

Figure 1 presents the percentages and odds ratios grouped by region, showing the lowest group, the highest group, and the average value (unweighted). When looking at the odds ratio’s, Western European groups are most open groups, followed by Eastern European groups. Asian and Caribbean groups are most closed groups. Central and South American groups are less closed than Asians. There is also substantial diversity within regions, however, which suggests that regional differentiation is not a dominant force. If one simply conducts an ANOVA on the 70 larger groups, it appears that 28 percent of the country variance in men’s endogamy is due to region, meaning that 72 percent is due to other characteristics of countries which are not homogeneous in regions. For the odds ratio’s, the percentage of variance due to region is 41 percent, but this is a somewhat smaller subset ($n = 49$).

To test our hypotheses, we use two-level regression models, in which individuals are nested within their ethnic group. In this way, we take into account that observations within the ethnic group are not independent from each other, leading to a correct estimate of standard errors (Snijders and Bosker 1999). Model 1 first of all provides the results of the multilevel logistic regression model, in which we contrast immigrant children married endogamously vis-à-vis exogamously. Model 2 then looks more specifically whether there are any differences between marrying natives (i.e., native-born persons of native-

born parents) and marrying other ethnic groups. The results are presented in Table 3. All contextual variables are standardized (except where noted), which means that effects can be compared and the magnitude of the effects can be evaluated.

Previous studies have shown that there are gender differences in the degree and pattern of ethnic intermarriage (Jacobs and Labov, 2002; Kulcycki and Lobo, 2002; Qian, Blair and Ruf, 2001; Stevens and Swicegood, 1987). We therefore present the results separately for men and women in Table 4.

We begin by considering the cultural variables. First, we see that people are more likely to marry within the group when they come from countries with an early marriage tradition. This confirms the hypothesis about third party influence. In countries with teenage marriages, marriages are often arranged by parents. Whether or not the marriages in the United States are actually arranged, fact is that parents will have a strong influence on marriage choice in these countries. When parents have a strong influence, they will tend to favor endogamy (Kalmijn 1998). Table 4 shows that the effect is stronger on women than on men, which is also in line with this interpretation. Family members generally are more negatively affected by outmarriage of daughters than of sons (Goode 1964).

The second variable is Christian background. Table 2 shows that Christian groups are less likely to marry within the group than non-Christian groups. One standard deviation increase in Christian background is associated with a 17 percent increase in endogamy (i.e., $1 - e^{-.19}$). Hence, religion plays a modestly important role. The effect is present for both men and women, but it is stronger for men. [Type of religion.] We also expected a negative effect on marriages to other groups since native Americans are largely Christian, but this is not borne out by the results in Table 3.

The third variable is our cultural measure of globalization. In line with our expectations, we see that more globalized groups are less likely to marry within the group. The effect is substantial in magnitude: one standard deviation increase in globalization is associated

with a 40 percent decline in the odds of endogamy. Moreover, we also see a negative effect on mixing with other groups. In other words, if people marry outside the group, the more globalized groups are more likely to marry with natives rather than with other ethnic groups. This supports the idea that globalization is at least in part also Americanization.

Language variables also affect endogamy. People from countries where English is the dominant language are more likely to marry outside the group. This is one of the strongest effects in the model and could also be observed in the descriptive tables. English speaking groups are among the most 'open' groups. This is now confirmed after controlling for structural forces. Clearly, the effect is also present on mixing with others versus with natives, which further underscores the importance of a common language. Language distance, however, has little effect, in contrast to what we expected. There is a modest effect for men, but it is negative, which contrasts our hypothesis.

Ethnic diversity, as measured by Alesina's Index of Fractionalization, has the expected effect. Groups which are more ethnically diverse are less likely to marry within the group. In other words, some groups as defined by countries of origin are probably not real groups but an amalgamation of various smaller ethnic subgroups. These subgroups can still marry endogamously, but there is little marriage across subgroups, and this lowers the chances of marrying within the group for the entire group. It remains unclear whether this is a structural effect (due to the smaller sizes of the underlying subgroups) or a cultural effect (due to a lower degree of ethnic identification). It can also be the case that the underlying subgroups in an ethnically diverse country are in fact more endogamous. Without data on subgroup membership, we cannot say more about this.

The most often analyzed structural variable is relative group size. Table 3 shows that the greater the relative size of a group, the more often their members marry endogamously. The effect is substantial, i.e., 39 percent increase in the odds of endogamy per standard deviation increase in size. The variation in size stems from two sources: differences among groups and differences among states. Previous studies have largely focused on the

latter source of variation. We can also separate the two effects. To do this, we create a group-level size variable (for the country as a whole) and a state-specific deviation from the group average for each group. The former variable has an effect of .62, the latter variable has an effect of .28 (unstandardized). Both effects are significant and the difference between these effects is also statistically significant.⁶ That both effects are present supports the structural hypothesis, but it is not clear why these are different. Perhaps size differences between groups are correlated with other, unmeasured factors which also affect endogamy. At the same time, one could argue that state differences are biased by selective migration (i.e., more assimilated immigrants would more often move to states where their group is small).

The second important structural constraint is the sex ratio. Immigrant groups can have skewed sex ratios and this can lead to nonmarriage, but possibly also to outmarriage. The results in Table 3 reveal a small positive effect of the sex ratio. The more persons of the opposite sex relative to the own sex, the higher the odds of endogamy. Or to turn it around, a shortage of persons of the opposite sex forces people to search and find mates outside the group. There is no effect on mixing with others rather than with natives, and this further confirms the underlying mechanism, which is only a push out of the group, not a pull toward a certain outgroup. Table 4 further shows that sex ratio's have a stronger effect on women than on men. Hence, when there is a shortage of partners, women are more likely to search and find mates outside the group than men, despite the fact that women are overall more likely to marry within the group.

We also have two important measures of opportunity which are based on a comparison of the individual and the group. First, we look at how many group members have the same education. We see a positive effect, which is in line with our hypothesis. The magnitude of the effect is weak, however, suggesting that highly (lower) educated members of lower (higher) educated groups are not often pushed outside the group. This is a surprising finding. More detailed analyses are needed to check if these effects are perhaps

⁶ The standard deviations of the two measures are rather similar.

asymmetric. The generational composition variable has a stronger effect. The more persons of the same generation within a group, the greater the odds of endogamy.

The last three structural variables are only relevant for the second choice: marrying with another ethnic group or with a native born person. The size of the foreign stock has a strong effect: the larger the total group of immigrant children in a state, the more often a person marries with another ethnic group. Ethnic mixing is thus more common in the typical immigrant states. The presence of persons in other groups who speak the same language also has a strong positive effect on mixing. When there are more people who speak the same language as the respondent, he or she is more likely to marry with another ethnic group rather than with a native born person. The religious composition of other ethnic groups in a state has no significant effect.

We conclude with discussing the individual-level variables. Women are more likely to marry endogamously than men, in line with the notion that women's marriage behavior is more strongly influenced by third parties. Nativity also has a very clear effect. The second generation is less likely to marry endogamously than the first (despite the fact that the first generation here is limited to immigrants who entered as children). The distinction between one and two foreign born parents also yields an interesting result. Second generation persons who have one native born parent are more endogamous than second generation persons who have two foreign born parents. This suggests that mixed marriages encourage mixed marriages in the next generation. The effects on marriages with other groups further suggest that this force is toward natives, not toward other groups.⁷ Education has a clear negative effect on endogamy, which is in line with research on specific groups. The effect is quite strong: a 15 percent reduction in the odds of endogamy per year of schooling. Moreover, the effect is also present and negative for the second choice, suggesting that higher education fosters integration with American society and not so much a more general tendency to mix across ethnic lines. Black

⁷ We still need to construct measures of ethnic mixing in the parent generation (these would be immigrant intermarriages and these could increase ethnic mixing in the next generation).

immigrant children are more likely to marry endogamously, which is also in line with expectations. There is no interaction with the size of the black population in a state.

Conclusion and Discussion

To be written.

Additional studies

(Batson, Qian, and Lichter 2006; Eschbach 1995; Jacobs and Labov 2002; Lievens 1998; Qian 1997; Qian and Cobas 2004; Qian and Lichter 2007)

(Fu 2001; Jacobson and Amoateng; Joyner and Kao 2005; Rosenfeld 2005; Tucker and Mitchell-Kernan 1990)

(Feliciano 2001; Hwang, Saenz, and Aguirre 1995; Hwang and Saenz 1990; Hwang, Saenz, and Aguirre 1997; Hwang, Saenz, and Aguirre 1994; Smits and Monden 2005) (Botev 1994; Gshur and Okun 2003; Jones 1991; Jones and Luijkx 1996; Okun 2001a; Okun 2001b)

(Gilbertson, Fitzpatrick, and Lijun 1996; Kalmijn 1993a; Kalmijn 1993b; Lee and Yamanaka 1990; Pagnini and Morgan 1990; Stier and Shavit 1994; Sung 1990) (Anderson and Saenz 1994)

(Lee and Fernandez 1998)

(Cretser 1999)

(Tzeng 2000)

(Klein 2001; Roy and Hamilton 2000)

(Qian, Blair, and Ruf 2001)

(Giorgas and Jones 2002)

(Kalbach 2002)

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**Explaining group differences in ethnic intermarriage:
A comparative analysis of immigrant children in the United States**

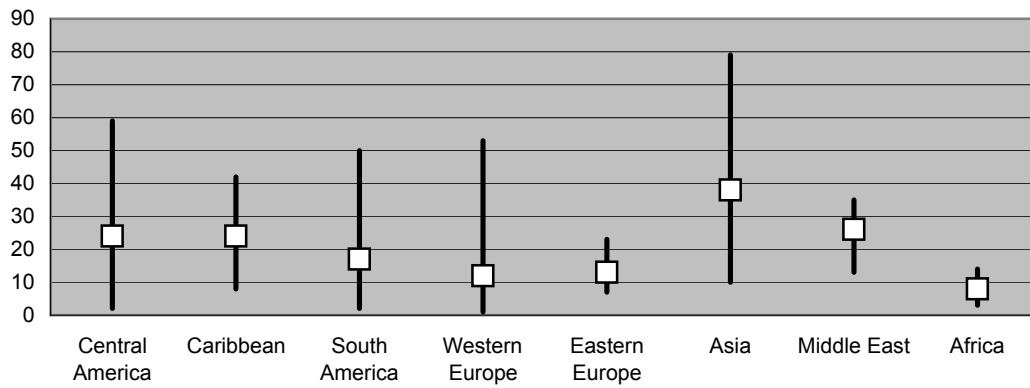
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Percentage of men married within the group
(regional average and extremes)



Log odds ratios of endogamy
(regional average and extremes)

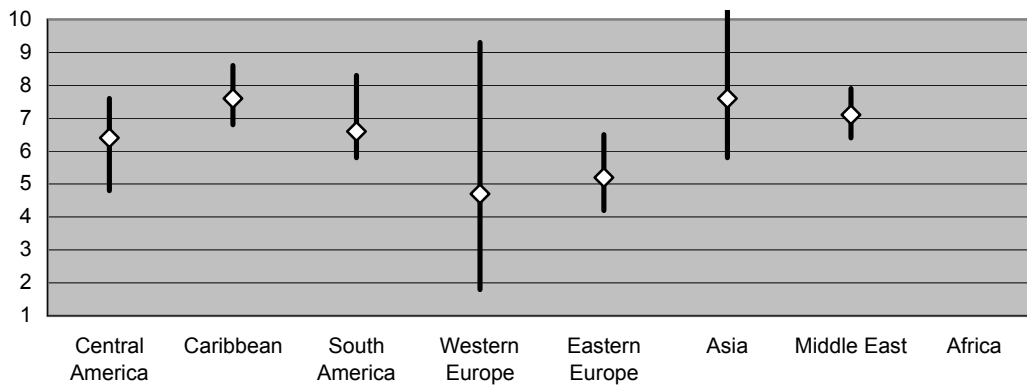


Figure 1. - Descriptive information on marriage choices of ethnic groups

Table 1.- Means, standard deviations and definitions of independent variables

	Mean	Min	Max	S.d.
<i>Individual variables</i>				
Woman versus man	0.49			
Black	0.05			
Second generation, one foreign parent	0.31			
Second generation, two foreign parents	0.30			
Immigrant (arrived age 17 or younger)	0.39			
Years of schooling	13.26	1.00	16.00	2.32
Birth cohort	1952	1904	1985	18
Year of observation	2000	1994	2006	4
<i>Macro level</i>				
Size of group (% , state x group level)	0.44	0.00	7.47	1.04
Sex ratio (opposite / same sex, group level)	1.01	0.57	1.77	0.13
Early marriage customs (group level)	0.30	0.00	9.26	1.35
Christian background (proportion Christians, group level)	0.66	0.00	0.99	0.35
Social globalization (index, group level)	38	1	87	22
Language distance to English (group level)	2.19	1.00	4.00	1.09
English dominant in origin (group level)	0.08			
Ethnic fractionalization (group level)	0.30	0.00	0.86	0.22
Own education (proportion, group level)	0.38	0.02	0.74	0.12
Own generation (proportion, group level)	0.59	0.12	1.00	0.16
Size of foreign stock (% , state level, all groups combined)	10.110	1.04	18.23	5.66
Own language outside group (% , state level)	.880	.00	7.52	1.98
Own religion outside group (% , state level)	15.02	0.00	98.83	29.71

Table 2.- Percentage married with own group, with other group, and with native stock by group

	% endo- gamous	N	% endo- gamous	N	Odds ratio	S.E.	N
	Men	Men	Women	Women	Couples	Couples	Couples
Canada	0.08	4229	0.09	3925	2.22	0.06	7803
Bermuda	0.04	26	0.03	31	.	.	56
Australia	0.00	85	0.00	84	.	.	169
New Zealand	0.00	28	0.00	16	.	.	44
Mexico	0.59	8232	0.62	7868	5.18	0.03	11205
Belize/British Honduras	0.21	14	0.19	16	.	.	27
Costa Rica	0.17	53	0.14	64	.	.	108
El Salvador	0.15	699	0.16	643	4.79	0.11	1238
Guatemala	0.29	148	0.36	121	7.58	0.21	226
Honduras	0.21	85	0.18	102	7.08	0.29	169
Nicaragua	0.27	115	0.23	136	7.18	0.23	220
Panama	0.02	92	0.02	125	.	.	215
Dominican Republic	0.42	259	0.37	295	7.30	0.15	444
Haiti	0.40	104	0.48	87	8.63	0.25	149
Jamaica	0.23	186	0.26	160	6.82	0.20	304
Bahamas	0.00	16	0.00	15	.	.	31
Barbados	0.18	22	0.19	21	.	.	39
Dominica	0.27	11	0.43	7	.	.	15
Grenada	0.08	12	0.25	4	.	.	15
Trinidad and Tobago	0.13	60	0.15	54	.	.	106
Cuba	0.42	1007	0.46	906	6.31	0.08	1492
Argentina	0.02	106	0.02	87	.	.	191
Bolivia	0.09	11	0.04	24	.	.	34
Brazil	0.05	57	0.04	74	.	.	128
Chile	0.08	75	0.11	57	.	.	126
Colombia	0.16	232	0.16	231	5.90	0.19	426
Ecuador	0.20	149	0.23	130	6.84	0.23	249
Guyana/British Guiana	0.28	57	0.31	51	8.33	0.34	92
Peru	0.04	113	0.05	108	.	.	216
Uruguay	0.00	13	0.00	22	.	.	35
Venezuela	0.07	56	0.07	59	.	.	111
Denmark	0.04	208	0.05	174	.	.	373
Finland	0.10	77	0.09	90	.	.	159
Norway	0.08	477	0.10	373	4.53	0.18	813
Sweden	0.05	443	0.06	343	4.00	0.24	766
England	0.04	1834	0.04	1759	2.19	0.12	3521
Scotland	0.02	545	0.02	557	.	.	1093
Ireland	0.08	1159	0.09	1051	3.53	0.11	2116
Northern Ireland	0.00	3	0.00	2	.	.	
Belgium	0.03	134	0.03	119	.	.	249
France	0.01	387	0.01	362	.	.	744
Netherlands	0.12	434	0.13	413	4.99	0.15	793
Switzerland	0.02	143	0.02	143	.	.	283
Greece	0.26	410	0.29	356	6.23	0.13	661
Italy	0.25	4113	0.30	3337	3.95	0.04	6434
Portugal	0.33	459	0.36	421	6.50	0.12	730

Azores	0.53	87	0.55	83	9.33	0.27	124
Spain	0.08	280	0.09	256	4.91	0.23	514
Austria	0.08	442	0.09	395	4.45	0.19	803
Germany	0.05	3655	0.05	3453	1.80	0.08	6921
Czechoslovakia	0.07	539	0.08	436	4.23	0.18	938
Hungary	0.08	556	0.11	415	4.51	0.16	925
Poland	0.22	1852	0.25	1659	4.46	0.06	3095
Armenia	0.50	2	0.25	4	.	.	5
Romania	0.07	123	0.08	116	.	.	230
Yugoslavia	0.17	258	0.18	245	5.97	0.18	458
Latvia	0.14	59	0.09	88	.	.	139
Lithuania	0.11	191	0.13	158	5.82	0.25	328
Other USSR/Russia	0.23	1514	0.30	1155	4.93	0.07	2318
Ukraine	0.14	162	0.20	116	6.50	0.25	255
China	0.43	481	0.41	511	6.85	0.11	783
Hong Kong	0.32	74	0.26	94	7.85	0.28	144
Taiwan	0.34	65	0.24	90	7.94	0.29	133
Japan	0.40	952	0.38	1018	5.97	0.08	1587
South Korea	0.40	201	0.26	302	7.01	0.16	423
Cambodia	0.40	73	0.32	91	8.28	0.27	135
Indonesia	0.10	30	0.06	47	.	.	74
Laos	0.79	61	0.60	80	10.67	0.36	93
Malaysia	0.25	8	0.18	11	.	.	17
Philippines	0.38	800	0.30	1030	5.77	0.08	1522
Singapore	0.00	3	0.00	4	.	.	7
Thailand	0.16	81	0.13	104	6.66	0.32	172
Vietnam	0.68	191	0.62	210	9.20	0.19	271
Afghanistan	0.50	8	1.00	4	.	.	8
India	0.44	192	0.45	188	7.93	0.18	296
Bangladesh	0.80	5	0.67	6	.	.	7
Burma	0.13	8	0.04	24	.	.	31
Pakistan	0.39	23	0.60	15	.	.	29
Iran	0.34	116	0.37	106	7.94	0.23	183
Iraq	0.30	23	0.35	20	.	.	36
Israel/Palestine	0.30	523	0.38	418	6.44	0.11	782
Palestine	0.35	26	0.43	21	.	.	38
Jordan	0.29	14	0.40	10	.	.	20
Lebanon	0.24	131	0.29	112	7.32	0.23	211
Saudi Arabia	0.00	3	0.00	5	.	.	8
Syria	0.15	54	0.19	43	.	.	89
Turkey	0.13	86	0.14	81	6.66	0.34	156
Northern Africa	0.05	22	0.04	27	.	.	48
Egypt/United Arab Rep.	0.13	31	0.09	45	.	.	72
Morocco	0.03	32	0.05	19	.	.	50
Ghana	0.25	4	0.25	4	.	.	7
Nigeria	0.07	27	0.18	11	.	.	36
Ethiopia	0.14	14	0.25	8	.	.	20
Kenya	0.00	6	0.00	7	.	.	13
South Africa (Union of)	0.07	42	0.11	28	.	.	67

Note: Odds ratio's not calculated for 2 x 2 tables with cells n < 10. Odds ratio refers to endogamous rather than not-endog

Table 3.- Multilevel logistic regression of endogamous marriage choices in the United States, 1994-2006

	Married with own group (versus native or other)		Married with other group (versus native)	
	b	p	b	p
<i>Individual variables</i>				
Woman versus man	.13	.00 *	.03	.45
Black	.41	.00 *	-.30	.01 *
Proportion black in state	.10	.00 *	.15	.00 *
Black x proportion black	.02	.70	-.03	.65
Second generation, one foreign parent	-1.89	.00 *	-.90	.00 *
Second generation, two foreign parents	-.61	.00 *	-.22	.00 *
Years of schooling	-.16	.00 *	-.08	.00 *
Birth cohort (b x 100)	.13	.00 *	-1.20	.00 *
Year of observation	.01	.05 *	.01	.08
<i>Group variables</i>				
Size of group (sg)	.33	.00 *	-.10	.00 *
Opposite / same sex (g)	.06	.00 *	.00	.86
Early marriage customs (g)	.32	.00 *	.04	.22
Christian background (g)	-.19	.00 *	-.02	.67
Cultural globalization (g)	-.51	.00 *	-.22	.00 *
Language distance to English (g)	.01	.69	-.14	.00 *
English dominant in origin (g)	-.88	.00 *	-.36	.00 *
Ethnic fractionalization (g)	-.17	.00 *	.06	.10
Own generation (g)	.14	.00 *	.13	.00 *
Own education (g)	.05	.02 *	.02	.50
Size of foreign stock (s)			.41	.00 *
Own language outside group (s)			.19	.00 *
Own religion outside group (s)			.03	.25
Constant	-9.59	.33	5.54	.59
Chi-square for model fit	3467		1429	
N respondents	24922		16264	
N groups	95		87	

Note: Models estimated on a random subsample of 500 respondents per group and full samples of smaller groups. All group variables except dominant English language standardized. sg = state x group level, g = group level, s = state level.

Table 4.- Multilevel logistic regression of endogamous marriage choices in the United States, 1994-2006

	Married with own group (versus native or other)				Married with other group (versus native)			
	Men		Women		Men		Women	
	b	p	b	p	b	p	b	p
<i>Individual variables</i>								
Woman versus man								
Black	.10	.35	.33	.00 *	-.11	.40 *	-.21	.11
Proportion black in state	.12	.00 *	.09	.00 *	.18	.00 *	.19	.00 *
Black x proportion black	-.03	.70	.11	.13	-.19	.02 *	-.02	.83
Second generation, one foreign par	-1.92	.00 *	-1.80	.00 *	-.93	.00	-.79	.00 *
Second generation, two foreign par	-.67	.00 *	-.66	.00 *	-.24	.00 *	-.09	.14
Years of schooling	-.12	.00 *	-.19	.00 *	-.05	.00 *	-.09	.00 *
Birth cohort (b x 100)	-.01	.00 *	-.01	.00 *	-.01	.00 *	-.01	.00 *
Year of observation	.02	.00 *	.01	.01 *	.01	.21	.01	.39
<i>Group variables</i>								
Size of group (sg)	.34	.00 *	.35	.00 *	.11	.00 *	.11	.00 *
Opposite / same sex (g)	.08	.01 *	.14	.00 *	-.05	.26	-.01	.84
Early marriage customs (g)	.11	.00 *	.35	.00 *	.07	.06	.01	.84
Christian background (g)	-.47	.00 *	-.26	.00 *	-.07	.09	.03	.53
Cultural globalization (g)	-.46	.00 *	-.59	.00 *	-.23	.00 *	-.34	.00 *
Language distance to English (g)	-.17	.00	.01	.83	.00	1.00	.01	.79
English dominant in origin (g)	-1.08	.00 *	-1.74	.00 *	.92	.00 *	.07	.49
Ethnic fractionalization (g)	-.15	.00 *	-.09	.00 *	.14	.00 *	.07	.05 *
Own generation (g)	.12	.00 *	.10	.00 *	.18	.00 *	.19	.00 *
Own education (g)	-.02	.50	.04	.12	.11	.00 *	.05	.10
Size of foreign stock (s)					.22	.00 *	.16	.00 *
Own language outside group (s)					.29	.00 *	.27	.00 *
Own religion outside group (s)					.05	.10	.00	.94
Constant	-13.56	.20	-5.54	.60	10.92	.32	15.16	.19
Chi-square for model fit	2371		2476		1060		1008	
N respondents	18600		17917		13658		12627	
N groups	95		95		95		95	

Note: Models estimated on a random subsample of 500 respondents per group and full samples of smaller groups. All group variables except dominant English language standardized. sg = state x group level, g = group level, s = state level.