Ethnic intermarriage in the Netherlands: confirmations and refutations of accepted insights

Les mariages mixtes inter-ethniques aux Pays-Bas: confirmations et infirmations des idées reçues

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Abstract Previous studies on ethnic intermarriage have been done mainly in the United States and in other classical immigration countries. This article examines ethnic intermarriage among Surinamese, Dutch Antilleans, Turks, and Moroccans in the Netherlands. From a theoretical and empirical perspective, it is important to examine whether patterns observed earlier in traditional immigrant countries equally apply to the Dutch context. To obtain a sufficiently large sample, this study pools five nationally representative surveys, conducted in the period 1988–2002. In line with findings documented before, it observes that ethnic exogamy occurs more frequently among the second generation, and among those who arrived at a younger age, and who are higher educated. Equally corresponding to previous work, the study reports that ethnic intermarriage is more frequent when the group-specific sex ratio is more uneven and when the ethnic group is predominantly second generation. Contrary to findings observed elsewhere, results show that the black Surinamese and Dutch Antilleans have high intermarriage rates and that there is little evidence for status exchange in mixed marriages.

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Résumé Les études antérieures sur les mariages inter-ethniques ont été réalisées essentiellement aux Etats-Unis et dans d'autres pays classiques d'immigration. Cet article examine les mariages mixtes inter-ethniques entre ressortissants originaires du Surinam, des Antilles néerlandaises, de Turquie et du Maroc aux Pays-Bas. D'un point de vue théorique et empirique, il est important de savoir si les schémas observés à ce jour dans les pays d'immigration s'appliquent également au contexte néerlandais. Pour obtenir un échantillon suffisamment grand, cette étude rassemble cinq enquêtes représentatives à l'échelle nationale, menées entre 1988 et 2002. En accord avec les résultats de la littérature, nous observons que l'exogamie ethnique est plus fréquente dans la seconde génération, parmi ceux qui ont immigré à un âge plus jeune, et parmi les plus instruits. De la même façon, nous observons que les mariages mixtes inter-ethniques sont plus fréquents quand le sex ratio du groupe est déséquilibré et quand le groupe est constitué en majorité de migrants de seconde génération. A l'opposé de la littérature, nous observons que les ressortissants noirs du Surinam et ceux des Antilles néerlandaises ont des taux élevés de mariages mixtes, et il ne semble pas qu'il y ait d' «échange de statuts» dans les mariages mixtes.

Mots-clés mariages mixtes · mariage · immigration · groupes ethniques

1 Introduction

In the migration literature, ethnic intermarriage is considered both an important indicator and force of integration (Gordon, 1964; Hwang, Saenz, & Aquirre, 1997; Lieberson & Waters, 1988). Marriages between members of different groups indicate frequent social interaction and strong social acceptance between groups (Kalmijn, 1998). In addition, immigrants who marry outside their own group have a better economic position (Meng & Gregory, 2005), and children of mixed marriages identify themselves less frequently with a single group and have less negative attitudes towards other groups (Kalmijn, 1998).

In this paper, we study ethnic intermarriage in the Netherlands. The majority of studies on ethnic intermarriage has been done in the United States (e.g., Lieberson & Waters, 1988; Pagnini & Morgan, 1990; Qian, 1999; Rosenfeld, 2002) and in other classical immigration countries like Australia (e.g., Jones & Luijkx, 1996; Meng & Gregory, 2005) and Canada (e.g., Kalbach, 2002; Tzeng, 2000). From a theoretical and empirical perspective, it is important to examine whether patterns observed earlier in traditional immigrant countries equally apply to the Dutch context. We will look at well-known determinants of intermarriage, such as immigrant generation, education, group size, and the sex ratio. Earlier research on ethnic intermarriage in the Netherlands has been largely descriptive (Esveldt & Schoorl, 1998; Hondius, 2001), and has been mainly concerned with transnational marriages (Hooghiemstra, 2003).

Besides ethnic intermarriage, we also study the characteristics of mixed marriages. More specifically, we examine the status exchange hypothesis proposed originally by Davis (1941) and Merton (1941). According to this idea, members of groups that are low in the status hierarchy in a country will compensate their lower
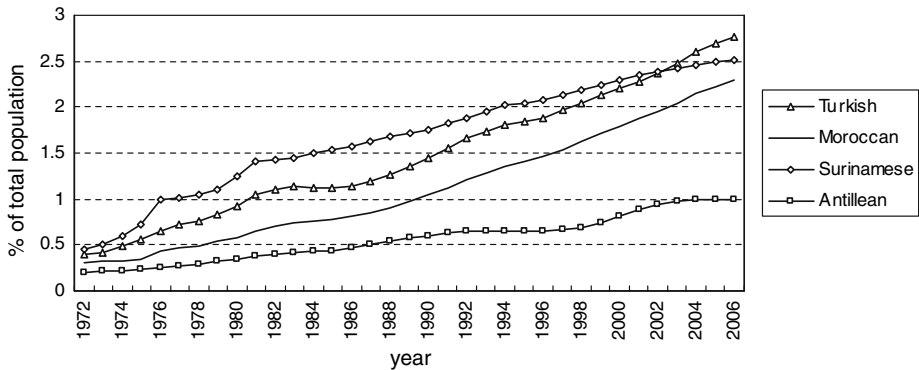
Fig. 1 Relative size of immigrant groups (first and second generation)

status with higher socioeconomic resources. Previous research has examined this hypothesis mainly by looking at black–white intermarriages in the United States (Fu, 2001; Kalmijn, 1993a; Model & Fisher, 2001; Qian, 1997; Rosenfeld, 2005). In our study, we test the exchange hypothesis in the Netherlands by studying educational assortative mating in ethnically endogamous and exogamous marriages.

Past research on ethnic intermarriage has often used marriage license data and census data. In the Netherlands, there are no recent census data and marriage license data do not contain information on the parents' country of birth. In our study, we rely on surveys that have been specifically designed to study immigrant populations. These surveys oversampled immigrants. Moreover, survey instruments have been translated into the minority language and bilingual interviewers have been used. We use five such large-scale, cross-sectional surveys conducted in the period between 1988 and 2002. The data refer to first- and second-generation immigrants from Turkey, Morocco, Suriname, and the Netherlands Antilles. In the remainder of this paper, we use the term "immigrant" to refer to the first and second generation and we use the term "native" to refer to native-born persons of two native-born parents. We analyze intermarriage between immigrants and natives. When we speak of marriage, we include cohabiting couples who are not formally married. The total number of marriages we examine is 7,365 in the pooled data set.

The Moroccans and the Turks were initially recruited as labor immigrants during the 1960s and 1970s and both groups have since then grown in size, partly through family reunification (in the 1980s), partly through marriage formation (in the 1990s), and also through higher fertility rates. It is estimated that 2.8% of the Dutch population in 2006 is first or second generation Turkish and 2.3% is first or second generation Moroccan (Fig. 1). Both groups of immigrants did not speak Dutch when they immigrated and both were mostly Islamic. The Caribbeans came from former Dutch colonies and began migrating to the Netherlands after World War II. Immigration reached a peak in 1974, just before Suriname gained independency from the Netherlands. Most of these immigrants were partly familiar with Dutch society and virtually all of them spoke Dutch as a second language before they immigrated. It is estimated that in 2006, 2.5% of the Dutch population is first or second generation Surinamese and 1% is Antillean (Fig. 1). All four ethnic groups are disadvantaged in terms of education, employment, and occupation, but the Su-

rinamese and Antilleans have a better position in the stratification system than the Turks and Moroccans (Tesser, Mertens, & Van Praag, 1999).

2 Theory and hypotheses

Ideas on ethnic intermarriage are informed by more general notions on preferences, opportunities, and third parties (Kalmijn, 1998; Lieberson & Waters, 1988). Inter-marriages are, first of all, an outcome of people's preference for a spouse with certain characteristics. It is assumed that an unmarried person searches for a potential spouse who is attractive in terms of socioeconomic and cultural resources. Socioeconomic resources refer to resources that produce economic well being and status. Potential spouses who are higher educated, and who have more prestigious jobs and higher income are assumed to be attractive candidates. Cultural resources refer to such issues as values, opinions, life style, knowledge, and worldview. Here the argument is not that people search for marriage candidates with more cultural resources, but rather that people search for potential spouses who are culturally similar (Kalmijn, 1998).

A second general factor that determines intermarriage is the opportunity to meet co-ethnics and members of other groups. When people interact on a day-to-day basis with members of the own group, they naturally have a higher chance to marry endogamously. Opportunities for contact are shaped by structural and demographic forces, such as the size of the group, the sex ratio, and residential segregation (Blau & Schwartz, 1984).

The role of third parties in the marriage market is another general factor discussed in the literature. Researchers have argued that the marriage market is not only a process between two potential partners, but is also affected by "outsiders," such as the family, the religious community, and the state. Basically, the idea on the influence of third parties consists of two different components. One line of reasoning stresses that children are socialized such that, as they are older, they identify themselves as a member of their own group. The norms that inhibit exogamy are assumed to be directly related to the homogeneity of the network in which people were raised. Another line of reasoning states that, even if people do not identify with a certain group, third parties (e.g., family, religious community, state) exert control of their marriage choices.

The general ideas on the role of preferences, opportunities, and third parties are used to develop a series of specific hypotheses.

2.1 Intermarriage

We first of all hypothesize about group differences in ethnic endogamy. The groups we distinguish differ in several important aspects and these differences lead us to formulate two competing hypotheses.

One line of reasoning stresses the role of skin color. The Caribbean groups mainly consist of descendants of African and Asian slaves, who are more dark-skinned than the Turkish and Moroccan groups. It is argued in the literature that in predominantly white Western countries, attitudes are generally unfavorable towards interracial marriages (Kalmijn, 1993a; Lieberson & Waters, 1988). Earlier studies done in the United States indeed found that interracial marriages occur less frequently than

marriages between other ethnic groups and native whites (Kalmijn, 1993a; Lieberson & Waters, 1988; Qian & Cobas, 2004; Qian & Lichter, 2001), and that exogamy rates are equally low for African Americans and black Caribbeans (Model & Fisher, 2001). This line of reasoning leads us to predict lower levels of exogamy among Surinamese and Dutch Antilleans than among Turks and Moroccans.

An alternative line of reasoning focuses on cultural differences, and leads to opposite expectations. One important characteristic of the groups under consideration is their language background (Stevens & Swicegood, 1987). Contrary to people from Suriname and the Netherlands Antilles, which were colonies from the Netherlands, immigrants from Turkey and Morocco were not exposed to the Dutch language before migration. When immigrants do not speak the host language well, there are naturally fewer opportunities of social interaction with natives, and, additionally, the cultural distance with the native population is higher. Furthermore, Turkey and Morocco are countries with a large Muslim population, as opposed to the more Christian populations in Suriname and especially the Netherlands Antilles. In addition, among the Turkish and Moroccan groups, arranged marriages with members of the same origin country and who have the same religion are common (Esveldt & Schoorl, 1998). Thus, because people prefer someone who is culturally similar and the strong role of parents in arranging marriages among Turks and Moroccans it is predicted that exogamy is lower among the Turkish and Moroccan groups than among the Caribbean groups. This hypothesis is opposite to the hypothesis based on racial boundaries.

We also look at ethnic subgroups within the Surinamese population. The reason for doing so is that the ethnic composition of Suriname is heterogeneous. Suriname consists of three main ethnic groups, which differ in their religiosity, practices of arranged marriages, and skin color. First, there are Hindustani or "East Indians," who originated from northern India in the latter part of the 19th century. The majority of this group is Hindu and arranged marriages among members of this ethnic group are fairly common (Sundberg, Sharma, Wodtli, & Rohila, 1969). Another group are the Indonesians, who emigrated from the region of Java, and are therefore sometimes referred to as "Javanese." This group is predominantly Muslim, but most of them have a liberal religious belief and religiosity therefore plays a minor role in their life. Afro-Surinamese or Creoles, who are mainly Christian, are the third large ethnic subgroup. Comparing these three ethnic subgroups, different expectations can be made. Considering skin color, one would expect that Creoles, who are black, are more endogamous than the two Asian groups. However, focusing on cultural characteristics instead (i.e., religion and arranged marriages), it is expected that Hindustani will be more likely to marry endogamously than the Javanese, and that Creoles will be the most exogamous of the three groups.

The age at the time of migration can be an important factor in endogamy. While some immigrants move to the country of destination as a young child, others migrate after they completed their education. We assume that immigrants who migrated at a younger age are less strongly socialized in their home country and will participate more frequently in settings in the receiving nation. For instance, they will attend school in the Netherlands, where they make friends and meet potential spouses. In addition, they will have more skills in the Dutch language, which enables them to interact socially with natives. In sum, it is expected that immigrants who moved at a younger age to the Netherlands, will be more likely to marry exogamously.

Next to examining the age at the time of migration, it is relevant to contrast the first generation with the second generation. It has been argued that the likelihood of ethnic exogamy increases across immigrant generations (Lieberson & Waters, 1988). With successive generations, immigrants are more strongly socialized in the culture of the host society, leading to fewer attachments to the own ethnic community (Gordon, 1964). In addition, new generations generally have more socioeconomic resources and will often move to non-ethnic neighborhoods (Massey & Denton, 1985), leading to fewer daily opportunities of meeting co-ethnics. In line with these ideas, a tendency towards more ethnic intermarriage with successive generations has been found in Australia (Giorgas & Jones, 2002), Belgium (Lievens, 1998), and the United States (Feliciano, 2001; Pagnini & Morgan, 1990; Qian, 1999; Qian, Blair, & Ruf, 2001; Stevens & Swicegood, 1987). Thus, it is expected that the foreign born are more likely to marry endogamously than native-born persons of foreign-born parents.

We also consider the role of immigrants' education (Hwang, Saenz, & Aguirre, 1995; Kalmijn, 1993b; Kulzycki & Lobo, 2002; Lievens, 1998; Qian et al., 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; Lieberson & Waters, 1988). Furthermore, it is maintained that higher education increases the opportunities for ethnic minorities to meet members of the out-group (Kalmijn, 1998; Lieberson & Waters, 1988). Most immigrant groups have a lower level of education than natives so that higher educated immigrants participate in settings in which the presence of co-ethnics is generally small, such as universities and high-status occupations. However, a substantial part of first-generation immigrants obtained their qualifications in the country of origin. To take this into account, we examine both the place where immigrants obtained their education and their educational qualifications. It is predicted that endogamy is lower among immigrants who went to school in the Netherlands and that endogamy decreases with higher levels of educational attainment.

We also examine time-related changes in the likelihood of endogamy. It is generally argued that because of modernization both immigrants and natives have a weaker preference for a potential spouse on ascribed characteristics, such as ethnicity. In line with this argument, Okun (2001) found a decline in ethnic endogamy among Asians, Africans, and Europeans in Israel in the period 1957–1995. Similarly, in a study of New York City, Gilbertson, Fitzpatrick, and Yang (1996) showed a diminishing rate of endogamy among Puerto Ricans within generations. We assume that in the Netherlands, as well as in the rather traditional countries of Turkey, Morocco, Surinam, and the Netherlands Antilles, the process of modernization affected the attitudes of the population towards intermarriage. Because immigrants in subsequent migration cohorts have been socialized in an increasingly modern environment, we predict that over time, there will be a weaker tendency towards ethnic endogamy.

An important factor that determines ethnic intermarriage, and which often changes over time, is the size of the ethnic group (Anderson & Saenz, 1994; Hwang et al., 1997; Lieberson & Waters, 1988; Lievens, 1998; Stevens & 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 & Schwartz, 1984). Members of larger groups more often meet group members and for that reason, are more likely to marry endogamously. Also, immigrants who belong to

sizable groups more strongly identify themselves with that group and can be better controlled by third parties. As immigrant groups become larger, there are more opportunities to fund places of worship, schools, and other ethnically based organizations (Breton, 1964). Furthermore, immigrant group size is assumed to increase negative attitudes among natives towards the members of that group (Blalock, 1969). Larger groups are more culturally, economically, and politically threatening to the native population, leading to social avoidance of immigrants. As a result, preferences among natives to marry members of larger groups are weaker. In view of these ideas, we predict that the larger the size of an immigrant group in the Netherlands, the higher the chance of endogamy among the members of that group.

Another time-related factor affecting ethnic endogamy is the sex ratio (Anderson & Saenz, 1994; Hwang et al., 1997; Pagnini & Morgan, 1990). In the majority of immigrant groups, the first settlers in a new country are young males (Castles & Miller, 2003). Because of chain migration and the arrival of immigrant women, the sex ratio generally becomes more balanced over time, leading to increasing opportunities to marry within the own ethnic community. A shortage of marriageable co-ethnics of the opposing sex naturally constitutes a structural force towards outmarriage (Blau & Schwartz, 1984). We hypothesize that the more balanced the group-specific sex ratio in the Netherlands, the more likely immigrants are to marry endogamously. We examine this empirically by looking separately at the group-specific sex ratio for men and women, and use the average of both to test the hypothesis.

A third contextual influence on endogamy is the generational composition of immigrant groups. Research has shown that within ethnic groups, there is a boundary between the first and second generation. First-generation members of ethnic groups less often marry second-generation members of ethnic groups than expected (Kalmijn, 1993b; Pagnini & Morgan, 1990). As a result, one would expect that endogamy is less likely for immigrants when the share of the second generation in the immigrant population is larger. This is not to say that immigrants generally prefer natives over second-generation members of their own group, but it is likely that the relative attractiveness of natives becomes higher when there are more members of the second generation. This hypothesis will be tested by including the year- and group-specific percentage of the second generation in the total group. We also test this effect specifically for the first generation (the majority of our sample).

Gender differences in ethnic endogamy have been documented in earlier studies (Qian et al., 2001; Stevens & Swicegood, 1987). With the important exception of Asians, minority men tend to marry out more often than minority women (Jacobs & Labov, 2002). There are several reasons for this, so it is believed. One argument is that women more often care for the children and for that reason third parties will more strongly prohibit outmarriage of women than of men. Also, it has been argued that in Muslim communities, and in religious groups more generally, interfaith marriages are more strongly prohibited for women than for men (Hooghiemstra, 2003). The reason is that when Muslim women marry non-Muslims, their children are lost to Islam (Kulzycki & Lobo, 2002). Another reason for expecting higher outmarriage rates for minority men is concerned with status exchange, which we will discuss in more detail below.

We finally look at differences in ethnic endogamy between married couples and cohabiting couples who are not formally married. It has been argued in the literature that partner choices are less endogamous in unmarried cohabitation than in marriage

(Blackwell & Lichter, 2004; Schoen & Weinick, 1993). Schoen and Weinick (1993) argue that cohabiting relationships are intended as a looser bond, so that a good match on ascribed characteristics would be less important. Blackwell and Lichter (2004) argue that cohabiting relationships are trial marriages so that the more heterogamous unions are weeded out before cohabiting unions turn into marriage. A third and related argument is that third parties will become more strongly involved when the union becomes formalized and more permanent. For example, parents will be more concerned when their daughter intends to marry a person outside the group—with the possibility of having mixed grandchildren—than when their daughter is only dating, or cohabiting outside the group. In other words, norms of endogamy will be applied less strictly to cohabiting unions than to marriages. This not only will lead to a higher chance of entering a mixed union when that union is a cohabiting union, it may also lead to a lower chance that cohabiting couples decide to marry when their union is mixed (Joyner & Kao, 2005).

2.2 Status exchange

We also test the so-called exchange hypothesis in the Dutch context (Davis, 1941; Fu, 2001; Kalmijn, 1993a; Merton, 1941; Qian, 1997; Rosenfeld, 2005). This hypothesis argues that in the eyes of the native population, there is a prestige hierarchy of social groups, with the native majority perceived as higher than the various immigrant groups. The reasons for these perceptions may lie in prejudices against ethnic minorities, xenophobia, racist beliefs, and ethnocentrism. Given that such perceptions indeed exist, it can be expected that native persons are more likely to marry an immigrant when they gain in socioeconomic status. In this case, the lower perceived prestige of being an immigrant is compensated by a higher socio-economic status.

We apply the exchange hypothesis to education. It is expected that members of lower-status groups who marry someone of a higher-status group are more likely to compensate this with their socioeconomic resources, such as education. Practically speaking, we expect that immigrant men more often marry down (relative to up) in terms of education when they marry a native woman than when they marry an immigrant woman. Similarly, native women will marry up more often (relative to down) when they marry an immigrant man than when they marry a native man. These ideas were supported in research in the United States among blacks (Kalmijn, 1993a; Qian, 1997), Asian Americans (Hwang et al., 1995), and Latinos (Schoen, Wooldrege, & Thomas, 1989). Important to note, however, is that even in ethnically mixed marriages, educational homogamy is the dominant form of mating (Rosenfeld, 2005). Hence, it seems that both asymmetry and homogamy are present in mixed couples, suggesting that the exchange hypothesis applies to only part of the couples.

The status exchange hypothesis is believed to apply mostly to marriages in which the husband is an immigrant and the wife is native born. The reason for this is that most marriages have a traditional division of labor, which means that men's socio-economic resources are more important for the couple than women's socioeconomic resources. Hence, a trade-off between higher socioeconomic resources on the part of the wife and a high native prestige on the part of the husband is less attractive. This may be an additional reason for why in most group's immigrant men are more likely to marry exogamously than immigrant women.

3 Data and methods

3.1 Data

The data are from the Dutch survey ''Sociaal-economische Positie en Voorzieningengebruik van Allochtonen en Autochtonen'' (SPVA), which was first conducted in 1988 and repeated in 1991, 1994, 1998, and 2002 (DANS, 2005; Martens, 1999; Veenman, 1999). The SPVA is a large-scale, cross-sectional survey of a native sample and four minority groups in the Netherlands: Turks, Moroccans, Surinamese, and Antilleans. People in cities were overrepresented in the sample frame since most members of ethnic minorities live in cities. The sample frame consists of 10–13 cities (depending on the survey year), covering about 50% of the four minority groups' population. To provide sufficiently large numbers for detailed analysis, the minority groups have been oversampled. Data were collected by means of personal interviewers, who were fluent in the minority language, and survey instruments were translated. The overall non-response rate for the minority groups was about 40%, ranging between 21% among the Turks in the 1988 survey and 56% among the Surinamese in the 2002 survey (DANS, 2005). The non-response rates are rather high compared to other countries, but this is common for survey research in the Netherlands. It should be further remarked that the SPVA contains a small panel (about 10% of the sample), and that we only used respondents when they were interviewed for the first time. Researchers have used the SPVA survey to study a variety of aspects of immigrant integration (Roelandt, Martens, & Veenman, 1991; Van Ours & Veenman, 2003).

The SPVA also has limitations for our study. One limitation is that heads of the households were the primary respondents. Partners were interviewed as well, but with a shorter questionnaire. Because in the Turkish and Moroccan groups, women are rarely heads of households, we need to exclude Turkish and Moroccan women who were primary respondents. Among the Surinamese and Antillean minorities, women are often the heads of households, so that including them is not problematic. We should emphasize, however, that our estimates of intermarriage for Caribbean women pertain to women who were heads of household. Even though this may be a selective group, it is not known in what direction this will bias our estimates.

Another limitation of the SPVA data for our purposes is that they refer to the stock of existing marriages rather than to newly weds. This implies that we can only include variables that pertain to the time before the marriage was formed. Some important potential determinants of intermarriage—e.g., language proficiency, religious attendance—are therefore not useful because their measures refer to the time of the survey. Since such characteristics may also change as a result of being in a mixed marriage, including them would certainly lead to biased outcomes. Another implication of the fact that we do not have newlyweds in our data is that there may have been selective attrition of mixed marriages due to the correlation between intermarriage and divorce. We could limit the sample to recently married couples (Mare, 1991), or to younger respondents (Fu, 2001), as is common practice, but our sample size does not allow this. This means that changes across marriages or immigration cohorts should be interpreted with care.

In our study, we examine ethnic intermarriage for first and second-generation immigrants. Although the sample of the second generation is rather small in our

study (about 5%), it is interesting to compare intermarriage patterns of both generations. Survey data on first-generation immigrants, however, introduce the problem of the timing of migration. We are interested in ethnic intermarriage in the Netherlands and therefore need to exclude foreign-born immigrants who were already married before they migrated (Hwang & Saenz, 1990). To deal with this issue, we rely on information on the year of marriage and the year of immigration. This information is provided in the surveys conducted in 1994, 1998, and 2002. For these samples, we only included respondents who were married after they migrated to the Netherlands. With respect to the other two surveys (1988 and 1991), we selected those who migrated to the Netherlands before the age of 30. We will check whether the results are different if we limit the analysis to the last three surveys where we can be sure that immigrants who entered while being married are excluded.

3.2 Design and methods

We use both a one-sided and a two-sided design to analyze intermarriage. To examine the degree of intermarriage and the determinants of intermarriage, we use a one-sided design. This means that we only use the samples of minority respondents. We examine how often minority respondents marry with natives and we examine how characteristics of minority respondents affect the likelihood of intermarriage. For the Turkish and Moroccan groups, this analysis is based on men only. For Caribbean groups, this analysis is based on men as well as on women who are household heads (see above). Note that many of the potential determinants of intermarriage that we consider—such as generation, age at migration, and so forth—only apply to immigrants. Hence, a two-sided analysis of these determinants would not be possible because these determinants are not defined for natives. This part of the analysis is done with a series of logistic regression models.

To examine the exchange hypothesis, we use two-sided perspectives and also include characteristics of the spouse (i.e., education). Note that marriages from the native sample—these are mostly endogamous marriages—are added in this part of the analysis. This allows us to compare mixed marriages to two types of endogamous marriages (native–native and immigrant–immigrant).

Important is that educational up- and downmarrying should be assessed while taking into account the educational distributions of the groups. For example, native men are on average more highly educated than native women. This can lead to systematic upmarrying for women in such marriages, even when mating would be random. Hence, we need to take such structural effects into account. The analysis therefore compares educational assortative mating in exogamous and endogamous marriages, using loglinear models for quasi-symmetry. Deviations between observed and expected counts in this model are explored to see if there is evidence for a trade-off between education and ethnicity. We explain the model in more detail when we get to the results.

3.3 Measures of ethnicity and intermarriage

The surveys contain information on the country of birth of the respondent, the partner, the parents, and the parents-in-law. We defined ethnic minorities as people who themselves were born abroad or whose parent(s) were (was) born abroad. Since

the sample was limited to ethnic minority groups, all the primary respondents are defined as either first or second-generation immigrants.

Using data on the birthplace of the partner and his or her parents, we consider three types of marriages (including cohabiting relationships):

(a) endogamous marriages (the partner is also a first or second-generation immigrant and s/he or the parent(s) come from the same country as the respondent),

(b) exogamous marriages with natives (the partner and his/her parents were born in the Netherlands),

(c) exogamous marriages with other (the partner is also a first or second-generation immigrant but s/he or the parent(s) come from a different country than the respondent).

Note that parents-in-law can have different origins. This is not common in our data set, however, and we decided to only use information about the father-in-law (or the mother-in-law if the information for the father-in-law is missing).

In a few cases (.6%), the country of birth for the partner was missing. These cases were deleted. A somewhat bigger problem is that in 1988, no data on parents-in-law were collected. In addition, in 6.4% of the other cases, the information on the place of birth of *both* parents-in-law was missing or reported as unknown. In these cases, we relied on the birthplace of the partner only. This introduces the risk of over-estimating intermarriage: Some of the partners may be classified as ''native'' whereas they were in fact second-generation immigrants. We therefore did all analyses again while excluding cases with missing data on parents-in-law. Except for differences in standard errors as a result of a lower number of cases, this makes very little difference in the results. The reason is that second-generation immigrants were relatively uncommon in the period we study. In the 1994–2002 period, the share of the second generation among primary respondents in our subset of the data was only 5%.

For the Surinamese, we have additional information about subgroup membership. Various Surinamese subgroups were presented to the respondent and the respondent was asked which subgroup he or she belonged to. In other words, this information was based on self-identification, not on the respondents' or parents' geographic origins. The distribution is as follows: 36% of the Surinamese are Hindustani, 36% are Creole, 8% are Javanese, and 20% did not specify a specific subgroup. This information is only available for the respondent.

3.4 Measures of independent variables

Most of the independent variables refer to the respondent, which is the husband in most cases. Some of the measures also are available for the partner. Other measures refer to the context and the couple.

Educational level (respondent): We use information on the highest education obtained. We classified this into five categories: (a) no education, (b) primary education, (c) lower secondary (lower general and lower vocational schooling), (d) higher secondary (higher general and middle vocational), (e) tertiary (higher vocational and university education). It is included as a set of dummy-variables where the second category (primary education) is the reference category.

Educational level (partner): This is measured in the same way as the educational level of the husband. In the loglinear analyses, combining the two lowest categories reduces the number of educational categories of both husband and wife. This was needed to gain better estimates.

Schooling in the Netherlands (respondent): We constructed a variable that indicates if the respondent obtained schooling in the Netherlands.

Second generation (respondent): We contrasted immigrants born outside the Netherlands with native-born respondents of whom one or two parents were foreign born.

Age at migration (respondent): We include the age at migration, measured in years. For the respondents in the second generation, we imputed the value of 0.

Cohabitation: We included a variable indicating whether the couple was living together or formally married. Note that cohabitation is common among the Surinamese (35%) and the Antilleans (42%).

Female: We include a dummy variable for gender (women are coded 1, men are coded 0). As Turkish and Moroccan women are excluded from our analyses, the effect of the ethnic group variable pertains to men, whereas the gender effect pertains to the contrast between women and men *among Caribbeans*.

Year of immigration: The year in which the person migrated to the Netherlands. For the native born in our sample, we assigned the year of birth. Since a dummy-variable is included for native born, the imputation value does not affect the effect of the year of immigration. Assigning a different value to the year of immigration will only change the effect of generational status, not the effect of the year of immigration.

Group size: We measure the size of each immigrant group (including the second generation) aged 15–50 relative to that of the Dutch population. These data are available on a year-to-year basis for the period 1972–2002 and are linked to the individual respondents in the sample.[1] To match the contextual data; we chose the year in which the individual respondent could be expected to marry. This was calculated as the sum of the year of birth of an immigrant and the group-specific average age at marriage. For those who were expected to marry before 1972, we used figures for 1972.

Group-specific sex ratio: We constructed a variable that measures the number of group members of the opposite sex divided by the number of group members of the same sex. To match the data, we use the year of birth of an immigrant and the group-specific average age at marriage. Previous research has shown that this somewhat crude measure of the availability of potential partners highly correlates with a more direct measure of the availability of opposite-sex persons at risk of marrying, such as those that take into account the age and marital distributions of groups (Fossett & Kiecolt, 1991).

Group-specific generational composition: This variable indicates the year-specific share of the second generation in the ethnic group for the 1972–2002 period.

Table 1 presents descriptive statistics of independent variables by ethnic group.

In order to see whether group size, the sex ratio, and the generational composition have changed over time, we present these trends, for each of the four groups in the Netherlands, in Figs. 1–4. Figure 1 shows first how quickly the relative size of the immigrant groups has increased. The increase has been more or

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[1] Obtained from the online database of Statistics Netherlands (http://www.cbs.nl/en/).

Table 1 Descriptive statistics of independent variables by ethnic group: means and proportions

	Turkish	Moroccan	Surinamese	Antillean
Proportion female (for Surinamese/Antilleans)			.28	.28
Age at migration (for first generation)	19	21	18	19
Proportion second generation (1991–2002)	.03	.01	.09	.11
Proportion schooling in the Netherlands	.29	.25	.69	.74
Proportion married (rather than cohabiting)	.98	.97	.64	.56
Educational level (proportions)				
No education	.11	.46	.05	.03
Primary education	.50	.30	.18	.13
Lower secondary	.21	.11	.40	.38
Higher secondary	.14	.09	.23	.26
Tertiary education	.04	.05	.14	.21
Year of migration	1978	1977	1975	1978
Size of immigrant group[a]	1.07	.84	1.60	.58
Sex ratio in immigrant group (for men)[b]	.61	.50	1.02	.98
Generational composition (% second)	3.42	3.95	12.89	15.45
N of marriages/cohabiting relationships	2,351	1,749	1,062	813
Number of mixed marriages	118	149	461	482

[a] The number of group members aged 15–50 relative to the total population 15–50, expressed as a percentage

[b] The number of males in the group aged 15–50 to the number of females (mean refers to men only)

Source: SPVA data 1988–2002

less continuous in the period shown. Figure 2 shows that the share of the second generation has grown as well, from about 0–10% in the early 1970s to about 30% in 2006. Figures 3 and 4 present the trend in the sex ratios. The figures show that for all groups, there was a clear shortage of female immigrants in the beginning of the historical migration period. This was especially dramatic for Turks and Moroccans, as Fig. 3 shows. This clearly shows that virtually all immigration from these two countries was based on the recruitment of what was then called ''guestworkers.'' The sex ratio for Turks and Moroccans became more balanced over time but balance was achieved rather late (in the 1990s). The two Caribbean groups also had a shortage of women initially, as Fig. 4 shows, but the sex ratio was far less skewed than it was for Turks and Moroccans. The Surinamese are also interesting in that an initial shortage of women quickly turned into a shortage of men during the 1980s.

4 Results

4.1 The degree of intermarriage

We first look at descriptive findings on the marital behavior of the four ethnic groups. Table 2 shows that intermarriage is rare among Turkish and Moroccan men—4, respectively, 6% is married to a native and 95 and 92% are married endogamously. Intermarriage with others is negligible. In contrast, intermarriage is quite common among Caribbeans: 22% of Surinamese men and 48% of Antillean
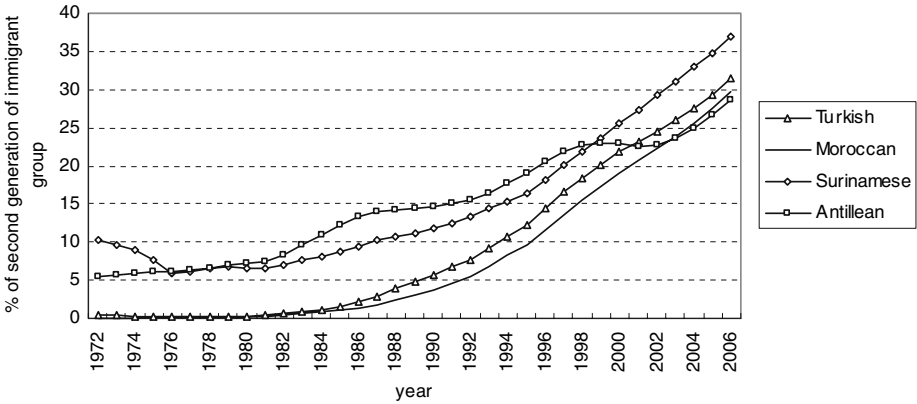
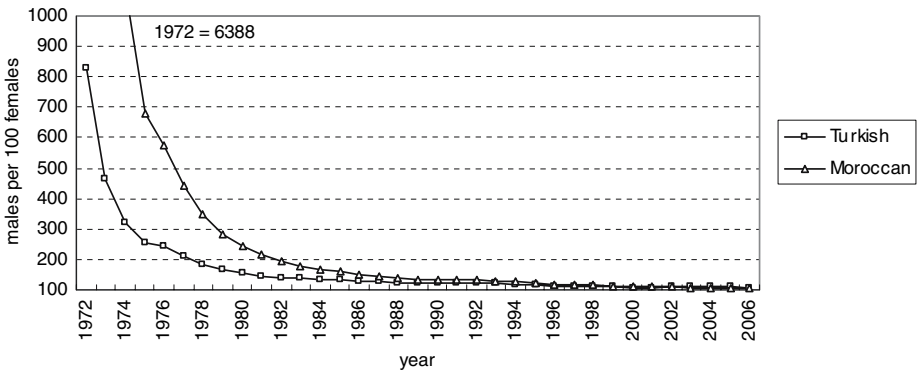**Fig. 2** Generational composition of immigrant groups

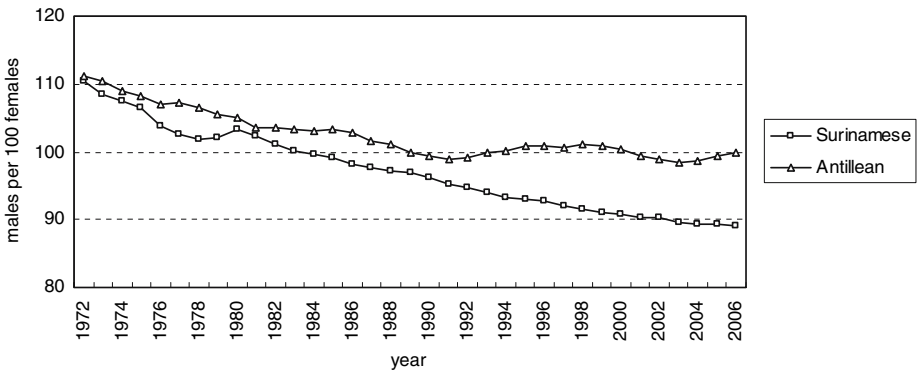**Fig. 3** Sex ratio immigrants: Moroccans and Turks

Fig. 4 Sex ratio immigrants: Surinamese and Antilleans

Table 2 Intermarriage statistics for ethnic minority men and women in the Netherlands

	% married with native Dutch	% married with other non-Dutch	% married with own group	N
Full sample				
Turkish men	3.9	1.1	95.0	2,350
Moroccan men	5.8	2.1	92.1	1,895
Surinamese men	21.5	7.1	71.4	1,093
Antillean men	47.7	14.1	38.2	587
Full sample				
Surinamese women	25.5	9.1	65.3	427
Antillean women	39.8	12.8	47.3	226
Subsample with complete age at marriage data				
Turkish men	5.2	1.5	93.3	1,221
Moroccan men	6.2	2.3	91.5	1,038
Surinamese men	25.1	9.0	65.8	708
Antillean men	47.5	17.3	35.2	375
Subsample with complete age at marriage data				
Surinamese women	27.8	8.0	64.2	338
Antillean women	42.1	14.0	43.9	171
Surinamese subsample 1994, 1998, 2002				
Hindu	10.1	4.8	85.2	378
Javanese	20.2	13.1	66.7	84
Creole	26.6	8.2	65.3	380
Other	56.3	15.0	28.6	206

Note: Percentages calculated for SPVA heads of households

Source: SPVA data 1988–2002 (or subsamples)

men are married with natives.[2,3] For women, these percentages are somewhat higher for Surinamese (26) and lower for Antilleans (40). Intermarriage of Caribbeans with other immigrant groups is also relatively common (between 7% and 14%). The degree of endogamy is 71% for Surinamese men and 38% for Antillean men. The bottom part of the table shows that there are also differences between Surinamese subgroups. The Hindustani marries more endogamously than the Javanese and the

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[2] Because the percentages for Surinamese and Antilleans were high and our sampling frame is restricted to cities, we tried to obtain evidence from other, nationwide surveys. We analyzed two large population surveys that contain information on country of birth and parental nativity (the AVO surveys from 1995 and 1999; Social and Cultural Planning Bureau, 1995, 1999). Although the sample size of the Caribbean part of this dataset is much smaller, the results are quite similar. In addition, our results are in line with observations using license data (Bakker & Giesbertz, 2005).

[3] We recalculated the percentages while leaving out cases with missing data on the birthplace of the parents. The results do not change, so we can be sure that missing data are not distorting the results. We also recalculated the figures for the subset of marriages for which we have data on the age at marriage. In this subset, we can exclude respondents who entered the country as being married. The degree of change is small. Hence, the overall results are not distorted by the fact that we cannot always be fully sure that we have excluded immigrants who entered the country as a married person. Thus, our indirect way of excluding such respondents works reasonably well.

Table 3 Logistic regression of ethnic endogamy in the Netherlands

	Model 0 endogamy versus mixed		Model 1 endogamy versus mixed		Model 2 endogamy versus mixed		Model 3 endogamy versus mixed with native	
	b	P	b	P	b	P	b	P
Group								
Turkish (reference)	0		0		0		0	
Moroccan	−.479	.00*	−.695	.00	−.691	.00	−.725	.00
Surinamese	–2.099	.00*	–1.649	.00	−.904	.00	−.815	.00
Antillean	–3.306	.00*	–2.893	.00	–2.018	.00	–1.954	.00
Female[a]	−.034	.73	.206	.07	.122	.28	.204	.11
Age at migration (for first generation)			.025	.00*	.000	.99	.010	.43
Second generation			−.783	.00	−.748	.00	−.648	.00
Schooling in the Netherlands			−.093	.38	−.052	.62	−.002	.98
Cohabiting versus married[a]			−.458	.00	−.508	.00	−.602	.00
Educational level								
No education			.326	.04	.281	.08	.532	.01
Primary education (reference)			0		0		0	
Lower secondary			−.249	.03	−.218	.05	−.379	.00
Higher secondary			−.412	.00	−.368	.00	−.513	.00
Tertiary education			−.994	.00	−.945	.00	–1.162	.00
Year of migration			.021	.00	.050	.00	.049	.00
Size of immigrant group					.098	.63	.117	.61
Sex ratio in immigrant group					–1.374	.00	–1.276	.00
Generational composition (% second)					−.029	.01*	−.029	.02
Constant			2.711	.00	3.999	.00*	4.055	.00
N of cases	6,578		6,578		6,578		6,284	
Model Chi-square	1,336		1,643		1,943		1,687	

[a] This effect pertains to Surinamese and Antilleans only (the variable is 0 for other groups)

Source: SPVA data 1988–2002 *$P < .05$

Creoles, who differ little from each other.[4] We come back to these results in the multivariate analyses.

These descriptive observations contradict the idea that attitudes in Western nations are generally unfavorable towards interracial marriage, and, as a result, Caribbean immigrants in the Netherlands would marry endogamously more often. On the contrary, our results support the alternative suggestion, which argues that because of better language skills and the cultural and religious similarity with the native Dutch population, Surinamese and Antilleans marry out more often than Turks and Moroccans. These conclusions, however, need to be validated in a multivariate perspective, in which other relevant factors are taken into account. This is the topic of the next section.

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[4] This pertains to men and women combined. Further analyses show that there are no significant gender differences for Javanese and Creoles, although the number of women for these subgroups is small so that we should be cautious in drawing firm conclusions. One exception is our finding that Hindustani men are significantly more endogamous than Hindustani women (88% vs. 77%, $\chi^2 = 7.5$, $P < .01$).

4.2 The determinants of endogamy

Table 3 presents binomial logistic regression models, where the (log) odds of marrying within the own native group are a function of a number of independent variables. Mixed marriages, of whatever type, serve as the reference category in Model 0, 1, and 2. Model 0 only includes the dummy-variables for the four groups (and sex to make the comparison with Turkish and Moroccan men more fair). Model 1 adds a series of independent variables that pertain to the individual level. Contextual characteristics (i.e., the size of the immigrant group, the sex ratio, and generational composition) are included in Model 2. In that way, we are able to assess whether changes over time in endogamy can be interpreted in terms of changes in the size, the sex ratio, and the generational composition of minority groups.[5]

We first look at the differences between ethnic groups in Model 0 (Table 3). Group differences are statistically significant (Wald = 978.7, $P < .01$), and confirm the results of Table 2. The difference between the two Caribbean groups and the two Mediterranean groups clearly dominates the picture, with the Caribbean's much more open than the Mediterranean groups. We also find statistically significant differences between the Turks and Moroccans. The Turks have a 1.6 times higher odds of endogamy than the Moroccans ($e^{+.479}$, $P < .01$). The results are rather similar in Model 1, where we add individual characteristics of immigrants. The contrast between the two Caribbean groups on the one hand and the Turks on the other hand becomes somewhat smaller, but it is still large and significant. The contrast between Moroccans and Turks becomes somewhat larger when individual-level variables are added.

These results confirm the idea that Caribbean groups, which are linguistically and religiously more close to the native population, marry out more often than the Turkish and Moroccan groups. We therefore find no support for the alternative suggestion, which argues that racial barriers to intermarriage would result in less frequent outmarriage among Caribbean immigrants. It should be noted that group differences in endogamy are also dependent on group size (Blau & Schwartz, 1984) so that odds ratios are needed to provide a more conclusive comparison. Unfortunately, our data do not allow us to calculate odds ratios because there are (by design) no Turkish and Moroccan women in the data. It should be noted, however, that the Turkish, Moroccan, and Surinamese minorities are quite similar in size in the Netherlands (CBS, 1999). Only the Antilleans deviate: They are about a third of the size of the Surinamese.

We also expected differences in the marital behavior of ethnic subgroups from Suriname. This allows us to look more closely at racial barriers, since some of the Surinamese have an Asian background (e.g., Javanese). On the basis of arguments about skin color and racial boundaries, one would expect that the Creoles would be most endogamous. On the basis of arguments about third party influence and religion, one would expect the Hindustani to marry more endogamously than Javanese and Creoles. We therefore estimated two additional models for the Caribbeans for those years in which detail on ethnic subgroup identification was provided. The results are presented in Table 4.

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[5] We also computed the models for a subset of cases where we excluded respondents for whom no age at marriage data was available. The results are the same, however (figures available on request).

Table 4 Logistic regression of ethnic endogamy of Caribbeans in the Netherlands[a]

	Model 1 endogamy versus mixed		Model 2 endogamy versus mixed	
	b	P	b	P
Surinamese versus Antillean	1.375	.00*	–	
Surinamese subgroups versus Antillean				
Creoles versus Antillean			1.299	.00
Javanese versus Antillean			1.195	.00
Hindu versus Antillean			2.292	.00
Other versus Antillean			.098	.62
Surinamese subgroups vis-a-vis each other				
Javanese versus Creole			−.105	.70
Hindu versus Creole			.993	.00
Hindu versus Javanese			1.098	.00
N of cases	1594		1594	
Model Chi-square	368		471	

[a] Only Caribbeans in survey years 1994, 1998, and 2002. Control variables as in Table 3 are included

Effects in Model 2 obtained from identical models using alternative contrasts

Source: SPVA data 1994–2002

*$P < .05$

In Model 1, we find a strong and significant difference between the Surinamese and the Antilleans (this was also observed in Table 3). After controlling for individual characteristics, the Surinamese have a 4 times higher odds of endogamy than the Antilleans. When adding the relative group size variable (figures not presented here), the effect declines to 3.5, which is still large. Hence, the stronger tendency of Antilleans to marry outside their own group is only partly the result of being a smaller group. Possibly, Antilleans are more open because they live less segregated spatially than the Surinamese (Tesser, van Praag, van Dugteren, Herwijer, & van der Wouden, 1995). We do not include a measure of segregation in our study, but previous work has shown that local marriage markets are important (Hwang et al., 1997).

The bottom panel of Model 2 in Table 4 shows that there are also differences between the Surinamese subgroups. The Hindustani has 2.6 times higher odds of endogamy than the Creoles and a 3 times higher odds of endogamy than the Javanese. There is no significant difference between the Javanese and the Creoles. Hence, the results support the arguments about the role of third parties and religion, and refute arguments about racial boundaries. Model 2 in Table 4 also shows that the Creoles are more closed than the Antilleans. Since both are African and ''black'', racial differences do not provide an explanation.

We now return to the determinants of intermarriage in Table 3. Table 3 also presents effects of generation and age at migration. In line with our expectations, we find that for those who were born in the Netherlands, endogamy is less common than for the foreign born. For the hypothesis on age at migration, we also find positive evidence. Immigrants who entered the country at a younger age are less likely to marry endogamously. This is in line with our expectations.

Another prediction we test here is that educational attainment has a positive influence on the likelihood of outmarriage. Our results show that educational level has one of the most powerful effects. In line with our prediction, we find that the

higher the education of an immigrant, the less likely it is that he or she marries within the group. The effect occurs at all levels of education and seems more or less linear. To evaluate the magnitude of the effect, we first look at the two educational extremes (tertiary education and no schooling). The odds of marrying endogamously are 3.7 times higher in the lowest group than in the highest group. When we look at a more realistic contrast—between primary schooling and higher secondary schooling—the odds are 1.5 times higher in the lower category. We also included a variable indicating whether a person was educated (partly or entirely) in the Netherlands, but this variable has no significant effect. Because schooling in the Netherlands is highly correlated with other variables, in particular with the age at migration, our data lack statistical power for providing reliable estimates on the place of schooling. Indeed, when re-analyzing the models excluding age at migration (results not presented here), we find that the effect of schooling in the Netherlands becomes—as expected—significantly negative. In other words, we find strong evidence that the boundaries between groups are affected by immigrants' level of education, and there is some evidence that ethnic barriers are an outcome of the country where immigrants obtained their education.

We also test two hypotheses for which we rely on the Caribbean groups only. First, we examine male–female differences. We expected that immigrant men are more exogamous than immigrant women. The results in Table 3 show that this hypothesis needs to be rejected: There is no significant difference between men and women. This result matches the small numerical differences that were observed in the descriptive tables. This result is in contrast with research from the United States (Qian, 1997).

The cohabitation variable has the expected effect for the Caribbean groups. Cohabiting couples who are not married are less likely to be endogamous than married couples. This is in line with the expectation that norms of endogamy and third party pressure are stronger when marriage is at stake.

We also present hypotheses about trends and time-dependent characteristics. We see that there has been an overall increase in endogamy across immigration cohorts. The result is surprising at first because it suggests that immigrants have become more endogamous over time, in contrast to expectations. When we add contextual indicators (Model 2), we see that the effect of the year of immigration is still positive and significant. A possible interpretation is that the size of immigrant groups is growing because of transnational marriages—which would suggest a ''globalization'' of the marriage market. Figures for the period 1990–2002 show a constant rate of about 15% of the immigrants in the Netherlands who migrated because of family formation (CBS, 2006). With respect to the ethnic minority groups included in our study, however, numbers are higher, especially in recent times. Although we do not have information on marriage migration for the entire period we study, population statistics show that in the period 1995–2002 those who migrated for marriage increased from about 40% to 60% among Turks, Moroccans, and Surinamese (CBS, 2006). Earlier research shows that such transnational marriages with co-ethnic spouses make up of a sizeable number of all marriages among the ethnic minorities (Hooghiemstra, 2003).

The contextual variables also have an effect. As expected, a skewed sex ratio has a negative effect on endogamy. Hence, a shortage of persons of the opposite sex results in more outmarriage. When we focus just on males, the effect is even stronger ($b = -1.647$, $P < .01$). Hence, shortages of immigrant women appear to lead

to more outmarriage among immigrant men. Relative group size has no effect, in contrast to what we expected. In part, this may be due to the high correlation between the year of migration and the relative size of the group. When we leave out year of migration from the model, group size does have the expected positive effect. Finally, we see the expected effect of generational composition. Most of our sample members are of the first generation. We see a negative effect of the share of the second generation at the group level. This effect is confirmed in an analysis for the first generation only ($b = -1.567$, $P < .01$). In other words, immigrants marry out more often when there are more second-generation members in their group.

Finally, we briefly discuss Model 3. If a person does not marry endogamously, he or she may marry with a Dutch person or with a first or second-generation immigrant from another group. As Table 2 showed, most mixed marriages are with Dutch, but some are also with other ethnic groups, especially among Caribbeans. In Model 3, we therefore present a logistic regression model where we contrast the endogamous marriages to the mixed marriages with natives only. Mixed marriages with other immigrants are left out of this analysis. The results are more or less similar to the results from Model 2. Some effects become somewhat smaller, whereas others become somewhat stronger. One interesting change is that the educational effect becomes stronger when we leave out the mixed marriages with other immigrants.

4.3 Intermarriage and status exchange

To examine the hypothesis on status exchange, we limit our analysis to marriages between Caribbeans and natives. The number of mixed marriages in the Turkish and Moroccan groups is too small for the loglinear analyses. Moreover, the Caribbeans are more interesting in light of the comparison with hypergamy of blacks in the United States. We also switch from a one-sided to a two-sided view of intermarriage. For this end, we add the native sample of the data, i.e., the native heads of households. This allows us to consider all types of marriages: Caribbeans married to Caribbeans, natives married to natives, Caribbean women married to native men, and Caribbean men married to native women. A possible problem with this 2×2 marriage table is that the native SPVA sample has poor data on the place of birth of the partner and her parents. We therefore must assume that all native heads were not married to Caribbeans. This is not a problematic assumption because other data show that only .38% of native heads are married to Caribbeans.[6] Hence, we misclassify only a very small part of these marriages. Note finally, that we do not discuss the case of Caribbean women who are married to native men since the sample size here is limited. We do include these marriages in the data, however, because the multivariate table would otherwise contain structural zeros, which would complicate the estimation.

To test the exchange hypothesis, we follow the method used by Kalmijn (1993) and Qian (1997). We have a cross-classification of husband's education (i), wife's education (j), husband's ethnicity (k), and wife's ethnicity (l). Ethnicity is coded 1 for immigrants and 0 for natives. We define the following loglinear model for the expected cell counts:

$$\lambda_{ijkl} = \lambda_i + \lambda_j + \lambda_k + \lambda_l + \lambda_{ik} + \lambda_{jl} + \delta_{ij} + \tfrac{1}{2}(k + l)\delta_{ij} + \delta_{kl} + \mathrm{e}$$

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[6] The AVO 1995 and 1999 data (see also endnote 2).

The first four terms adjust the marginal distributions of the four variables (λ_i, λ_j, λ_k, λ_l). The second two terms adjust for the association between education and ethnicity, for husbands and wives separately (λ_{ik}, λ_{jl}). The δ-parameters describe assortative mating for education (δ_{ij}) and ethnicity (δ_{kl}). Various descriptions are possible, but we chose simple association models, which describe intermarriage in terms of odds ratios that measure the boundaries between pairs of groups. The greater the odds ratio, the less often a boundary is crossed. For educational assortative mating, we chose the model of quasi-symmetry, which yields (log) odds ratios for each of the six pairs of educational groups (Hout, 1983; Kalmijn, 1993a). For ethnic endogamy, we include one parameter, which is equal to the (log) odds ratio for the boundary between natives and immigrants. Note that the model includes an interaction effect of educational homogamy and ethnicity. This allows educational homogamy to be different for natives and immigrants, which, as we will see shortly, is also true in reality. For mixed couples, it is assumed that the pattern of educational assortative mating is half way the pattern for natives and immigrants. In other words, we assume that there is nothing special about these couples except that they consist of a native and an immigrant spouse.

What the model does is to match up the natives and immigrants using their own educational marginal distributions and assuming that there is a symmetric and ethnic-specific pattern of educational homogamy (Kalmijn, 1993a). Hence, the only asymmetry in the model arises from the marginal distributions. Subsequently, we examine the expected counts under the model and compare these with the observed counts. This comparison allows us to assess whether the marriage patterns are more asymmetric than expected under the model. If there is remaining asymmetry, we can assess if it points to the exchange hypothesis.

Table 5 Loglinear models for educational assortative mating by ethnicity: log odds ratio's

	Model 1		Model 2	
	B	SE	b	SE
Elementary–lower secondary (1-2)	.828	.101	1.109*	.139
× Caribbean			−.664*	.224
Lower secondary–higher secondary (2-3)	.813*	.106	1.138*	.146
× Caribbean			−.750*	.231
Higher secondary–tertiary (3-4)	1.348*	.125	1.441*	.152
× Caribbean			−.300	.297
Elementary–higher secondary (1-3)	1.978*	.142	2.350*	.192
× Caribbean			−.945*	.313
Lower secondary–tertiary (2-4)	2.758*	.138	3.309*	.188
× Caribbean			−1.436*	.309
Elementary–tertiary (1-4)	4.445*	.217	4.904*	.282
× Caribbean			−1.368*	.489
Likelihood ratio Chi-square	173		131	
D.f.	42		36	
N	4,136		4,136	

Note: All models control for the marginal distributions of education of husband and wife, for ethnic intermarriage and for the association between ethnicity and education (separately for husbands and wives)

Source: SPVA data 1988–2002 (with native SPVA samples added)

* $P < .05$

Table 5 presents (selected) parameters for educational boundaries. The educational boundaries are strong and significant. The more distant the educational categories, the higher the odds ratio, hence, the stronger the boundary. Intermarriage between the lowest and the highest educational category is especially rare. The second model in Table 5 shows that educational homogamy is generally weaker for Caribbeans than it is for natives. The model that includes interactions of ethnicity and educational homogamy fits significantly better and most log odds ratios are lower for Caribbeans. Apparently, education is a less important factor in the marriage market for Caribbeans than for native Dutch persons.

In Table 6, we explore the residuals from the loglinear model. We calculate the number of women marrying up in education and the number of women marrying down in education. The ratio of these two is called the hypergamy ratio. The hypergamy ratio is calculated for the expected counts under the model for quasi-symmetry and for the observed counts. The comparison of these two is essential since there are strong differences in the educational composition of Caribbeans and natives and such differences also interact with gender. Hence, we need to take into account educational composition, and that is what the expected counts under the loglinear model allow us to do.

We first see that in native–native couples, there is clear tendency toward hypergamy: Native women marry up more often than down. This is also true for the expected counts, however, showing that some of the asymmetry arises from gender differences in education in the population at large. The observed ratio is 9% larger than the expected ratio, however, showing that there is more hypergamy than expected.

When we look at endogamous Caribbean couples, we see no tendency toward hypergamy. In Caribbean couples, husbands and wives have more or less the same level of education. If there was random sorting, one would expect women to marry up. Important to note is that the expected degree of hypergamy is lower in endogamous Caribbean couples than in endogamous native couples. This is due to smaller gender differences in education in the Caribbean sample. As a result, there is somewhat less hypergamy than expected in the Caribbean population.

Table 6 Observed percentages of women marrying up and down in terms of education and expected percentages based on loglinear model of quasi-symmetry

	Observed	Expected	Observed/expected
Native women married to native men			
Women marrying up	.330	.321	
Women marrying down	.192	.203	
Up/down (hypergamy ratio)	1.719	1.577	1.090
Caribbean men married to Caribbean women			
Women marrying up	.305	.322	
Women marrying down	.312	.298	
Up/down (hypergamy ratio)	.977	1.082	.904
Caribbean men married to native women			
Women marrying up	.329	.306	
Women marrying down	.259	.265	
Up/down (hypergamy ratio)	1.273	1.153	1.104

Note: Expected percentages based on loglinear model for quasi-symmetry as presented in Table 5, Model 2

In mixed marriages, we see a tendency toward hypergamy. This ratio is between the ratio for native endogamous marriages and Caribbean endogamous marriages. In other words, the marriage pattern of mixed couples is in between that of the two respective endogamous types. When we compare the ratio to what can be expected, given the loglinear model of quasi-symmetry, hypergamy would also be more common in such marriages. Nonetheless, the observed ratio is larger than the expected ratio.

The most important part of the test of the hypothesis can be obtained by comparing the three groups of marriages. We can first look at the perspective of Caribbean men. When comparing Caribbean men married to Caribbean women with Caribbean men married to native women, we see a difference. In the former case, hypergamy is weaker than expected, whereas in the latter case, hypergamy is stronger than expected. This confirms the hypothesis because there is more downmarrying for Caribbean men when they marry outside the group. We can next look at the perspective of a native woman. When comparing native women married to native men with native women married to Caribbean men, we see little difference. In both cases there is more hypergamy than expected. This is in contrast to the hypothesis since native women do not marry up more often when they marry outside the group.

Although these results partly confirm the exchange hypothesis, the differences are small. Moreover, when we compare our figures to those for black–white marriage in the United States, using the same model and the same ratios, we see an important difference. In the Netherlands, the observed hypergamy ratio in mixed marriages is 1.27 compared to an expected ratio of 1.15, i.e., 10% higher than expected. In the United States, these numbers are 1.25 and .93, respectively, i.e., 34% higher than expected (Kalmijn, 1993b, p. 138). Hence, hypergamy in mixed marriages is clearly weaker in the Netherlands than in the United States.[7]

5 Conclusions and discussion

Earlier studies on ethnic intermarriage have been done mainly in classical immigration countries. In this article, we focus on ethnic groups in the Netherlands, and examine whether patterns and determinants of ethnic intermarriage can be generalized. We pooled five nationally representative immigration surveys, covering the marriage years between 1960 and 2002. We studied the marital behavior of two Caribbean groups (i.e., Surinamese and Dutch Antilleans) and two Mediterranean groups (i.e., Turks and Moroccans). Drawing on the literature on ethnic intermarriage and the three general notions of third parties, opportunities and preferences, we formulated a number of hypotheses. Our results are generally in line with earlier studies but we also find important deviations from standard patterns.

In line with theoretical expectations and earlier observations, we find that ethnic intermarriage in the Netherlands is affected by the age at migration, immigrant generation, education, the sex ratio, and generational composition. Immigrants who arrive at a young age marry more often exogamously than those who come at a later

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[7] This conclusion does not lose its force when we add the comparison with native endogamous marriages since these marriages in the Netherlands are somewhat more hypergamous than expected whereas the white–white marriages in the United States were as hypergamous as expected.

age. Similarly, the likelihood of exogamy is higher among the second generation than among foreign born. Furthermore, we find that the likelihood of intermarriage increases with educational attainment. Our results also show that intermarriage occurs more frequently when the group-specific sex ratio is more uneven and when the second generation in the ethnic group is relatively larger. In sum, a number of patterns and determinants of endogamy, which have been observed in mainly classical immigration countries, can be generalized to the Dutch context.

An interesting inconsistency between previous studies and our study lies in the group differences we found. We found that the Turkish and Moroccan groups were much more closed than the Caribbean groups. The small relative size of the Antillean group may partly explain this difference, but the Surinamese in the Netherlands are more or less of the same size as the Turks and the Moroccans and they too marry out much more often than the Mediterreneans. Hence, we conclude that in the Netherlands, the Turks and Moroccans are more closed than the Surinamese. In the beginning of the paper, we formulated two contrasting hypotheses about these differences. The first hypothesis argues that differences in religion and language lead to strong boundaries between groups in society. The second, and competing hypothesis argues that boundaries on the basis of race and skin color are more important. Our findings are surprising in that they seem to suggest that in the Netherlands, racial boundaries are weaker than religious and language boundaries. Moreover, when we compare the various Surinamese subgroups, we obtain additional evidence against the hypothesis of black–white boundaries. More specifically, for the Surinamese subgroup of Creoles—who are mostly considered black—intermarriage percentages are higher than for the Hindustani and about the same size as those for the Javanese.

Our conclusion that the black–white boundary in the Netherlands is relatively weak is further underscored when we make comparisons with other countries. In our data, we find that almost a quarter of the Surinamese men and about half of the Antillean men are married with natives (i.e., Dutch-born persons of Dutch-born parents). Comparable percentages for other countries suggest that the black–white boundary is stronger elsewhere. In the United States in the 1990s, only 8% of black men is married outside the group (Qian, 1997) and in South Africa, this is even rarer (Jacobson, Amoateng, & Heaton, 2004). In England, about 16–18% of foreign-born black men are married to a native white partner (Model & Fisher, 2002). Although this is higher than in the United States, it is still lower than it is in the Netherlands, especially when compared to the Antilleans. In view of the strong racial barriers elsewhere in the Western world, we are tempted to conclude that in the Netherlands, the black–white boundary is often crossed.

A related deviation from findings in other countries lies in the exchange hypothesis. We find that when the black–white boundary *is* crossed in the Netherlands, it less often takes the form of an exchange between ethnic prestige and socioeconomic status. By contrast, studies in the United States have shown that the black–white boundary is strong and that when it is crossed, it is conditional upon socioeconomic status exchange. This suggests that endogamy and status exchange are two sides of the same coin and that in both respects, the Netherlands is a relatively open society.

Our conclusion about the position of the Netherlands vis-à-vis other countries is provisional and needs to be confirmed in systematic comparative research. In a more general sense, we think that it is an important task to compare the black–white

boundary in a large number of countries, including the United States. In such an analysis, it will be important to consider demographic, economic, institutional, and historical determinants of the strength of the black–white boundary simultaneously. Examples of such factors are the relative size of the group, the black–white socio-economic gap, institutional definitions of "blackness," and historical characteristics of black–white relations in a specific country. All these factors have frequently been debated in the literature on race relations (e.g., Davis, 1991; Harris, 1974; Sowell, 1978; Telles, 2003), but systematic quantitative research testing such notions has only recently been developing (Model & Fisher, 2001, 2002) and studies containing a large number of countries have yet to be done.

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