



# Irreconcilable differences? Ethnic intermarriage and divorce in the Netherlands, 1995–2008

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## ABSTRACT

This study uses population data of the Netherlands (municipality registers) between 1995 and 2008 to describe and explain the occurrence of divorce among recently newlywed interethnic and mono-ethnic couples ( $N = 116,745$ ). In line with homogamy theory, divorce risks are higher for interethnic couples, in particular if the spouses were born and raised in countries that are culturally distant from each other. In addition, the effect of cultural distance is smaller for second generation immigrants than for first generation immigrants. There is no evidence for a higher risk of divorce among Black–White marriages. In line with convergence theory, results show that the higher the divorce propensity in the wife's origin country, the higher the divorce risk of a couple is.

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## 1. Introduction

Research on marriage between members of different ethnic groups can be traced back to the roots of sociology as it refers to one of its core problems, namely the problem of cohesion. Ethnic intermarriage, also known as ethnic exogamy, indicates strong links between members of different ethnic groups within society and is therefore considered to be an important indicator of the social integration of ethnic groups (Gordon, 1964; Kalmijn, 1998; Monden and Smits, 2005).

From this perspective, it is important to consider divorce of ethnic intermarriages because ethnic exogamy does not have the same value for societal cohesion if a large proportion of these marriages end in divorce (Zhang and Hook, 2009). Generally, studies showed that interethnic couples are more likely to divorce than mono-ethnic couples in the United States (Fu, 2006; Jones, 1996; Zhang and Hook, 2009), Australia (Jones, 1994) and the Netherlands (Janssen, 2002; Kalmijn et al., 2005). Nevertheless, exceptions to this pattern have been found. Several specific types of interethnic couples appeared to have more stable marriages in comparison to mono-ethnic marriages (Jones, 1996; Schwertfeger, 1982; Zhang and Hook, 2009).

In this study, we aim to describe and explain the occurrence of divorce among interethnic couples in comparison to mono-ethnic couples. Therefore, we address the general research question: to what extent and why does the ethnicity of partners affect the risk to divorce?

We aim to contribute to existing literature in four ways. First, theoretically: we test old and new hypotheses from existing theory to broaden our understanding of interethnic divorce patterns. Scholars have relied on homogamy theory and convergence theory to guide their research (Kalmijn et al., 2005; Zhang and Hook, 2009) and we extend previous research by arguing that effects proposed by the theories should be less strong for second generation immigrants.

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Second, conceptually: we study divorce patterns of (almost) every national origin group in the Netherlands, including immigrants as well as the native Dutch. In other studies, in particular in the United States, pan ethnic identity measures of ethnicity are often used. In these studies, immigrants are classified into large groups, such as Asians, Hispanics, Blacks and Whites. As a consequence, interethnic marriage (and divorce) within such panethnicities go unnoticed. In a pan ethnic categorization, for example, Blacks from Suriname (Dutch speaking post-colonial immigrants) would be classified together with Blacks from Somalia (non-Dutch speaking refugees), although these groups differ in terms of language, religion, and traditional norms and values. Hence, our national-origin concept of ethnicity captures the more fine-grained group boundaries in the Netherlands in comparison to pan ethnic concepts of ethnicity.

We distinguish between 124 national origin groups, allowing us to examine patterns of divorce risk among various combinations of national origin groups. We provide descriptive information about divorce risks among and between the most important ethnic groups in the Netherlands. Our hypotheses, however, are about interethnic divorce within and between all 124 groups in general instead of between only the largest groups in the Netherlands.

Third, methodologically: we contribute to existing literature by using longitudinal data on the entire Dutch population. Previous research has been mostly of static nature, thereby relying on cross-sectional data to examine the risk of divorce. A major problem with these static data is that they start with a selective sample of (surviving) marriages. The longitudinal design of the data we use circumvents this problem because we start our observations with newlyweds. We follow couples over a 13-year period and use event history techniques to examine the annual risk of divorce while correcting for two-way clustering in our data on the husband's and wife's origin country.

Fourth, descriptively: little is known about recent divorce rates of interethnic and mono-ethnic couples in the Netherlands. Most Dutch studies relied on data until 1999 (Janssen, 2002; Kalmijn et al., 2005). This study contributes to the literature by providing up-to-date descriptive information on the linkage between national origin and the risk of divorce in the Netherlands, by covering the period between 1995 and 2008.

## 2. Theory and hypotheses

Two theories have been used in interethnic divorce literature: homogamy theory and convergence theory. In homogamy theory it is argued that interethnic couples are more likely to divorce than mono-ethnic couples (Kalmijn et al., 2005; Zhang and Hook, 2009). Convergence theory predicts the divorce rate of interethnic couples (e.g., Dutch-Surinamese couples) to be in between the divorce rates of the endogamously married couples involved (e.g., mono-ethnic Dutch and Surinamese couples, respectively) (Jones, 1996). Although the theories' predictions seem to contrast each other, we argue in line with Jones (1996) that their mechanisms could work simultaneously.

### 2.1. Homogamy theory

According to homogamy theory (Kalmijn et al., 2005) two mechanisms play a role in the likelihood of divorce.

First, it is argued that individuals who marry across ethnic boundaries experience difficulties in dealing with different preferences. Interethnic partners disagree more often on important relational (e.g., how to raise the children) and general issues (e.g., worldviews), while it is also more likely that they share fewer interests and activities together than mono-ethnic partners do. For example, Hohmann-Marriot and Amato (2008) show that interethnic couples report more conflict and less shared values (although the influence on divorce risks was moderated by negative third party influence). Following homogamy theory, it is therefore more problematic for interethnic partners to live in marital harmony than it is for mono-ethnic partners who were raised with similar cultural norms and values (Gaines, 1997; Janssen, 2002; Kalmijn, 1998).

Second, homogamy theory considers the influence of *third parties* to result in additional challenges for interethnic couples (Gaines, 1997; Janssen, 2002; Kalmijn et al., 2005). Third parties, such as friends and family, are likely to prefer ethnic endogamy over exogamy in order to maintain internal group cohesion and protect the ethnic identity of their group (Kalmijn, 1998; Tolsma, Lubbers and Coenders, 2008). Thus, third parties may exert control over individuals by posing sanctions on undesired marriage behavior. For example, they may express direct disapproval or refrain from social support to the couple (Hohmann-Marriot and Amato, 2008; Killian, 2001). Following the arguments of preferences and third parties, homogamy theory expects that *partners from different origin countries have a higher divorce risk than partners from the same origin country (H1)*.

Based on homogamy theory, we derive additional hypotheses. To begin, interethnic marriages are not alike in terms of cultural distance. For example, partners in a Belgian-Dutch couple are more alike than partners in a Moroccan-Dutch couple. The religion of the Dutch and Belgians is for instance often the same (Christianity) and both come from relatively individualistic countries (Hofstede, 1980), whereas the religion of the Moroccans and the Dutch is most likely to be different (Christianity versus Islam) and the degree of individualism in the countries differs to a large extent (Hofstede, 1980). A larger cultural distance relates to more diverging preferences, norms, and values, which indicates larger incompatibility in turn. Also, a larger cultural distance between groups is likely to denote a stronger boundary between them, which increases third party opposition to exogamy (Kalmijn et al., 2005). Therefore, we hypothesize that *the larger the cultural distance between the wife's and husband's origin country, the higher the divorce risk (H2)*. Note that although this hypothesis refers to the origin country of husbands and wives, it does not imply that immigrants from particular origin countries are all the same (e.g.,

there can be Christian immigrants originating from predominantly Muslim countries). What we argue is that even minorities are affected by the dominant culture in their origin country to some extent and we expect this to affect their divorce risk.

There are also racial differences between interethnic marriages. Studies in the United States show enduring social boundaries between Blacks and Whites (Kalmijn, 1993) and continuing discrimination against Black–White couples (Lee and Bean, 2007; Yancey, 2007). It has also been found that Black–White marriages are the least stable of all racial intermarriages (Zhang and Hook, 2009). There have been economic and social inequalities between the white majority of the Netherlands and the black immigrants from its former Dutch colonies (i.e., Suriname and the Dutch Antilles) as well (Bovenkerk, 1980). These inequalities are less strong today and recent research has found that over 60% of the black Caribbean immigrants in the Netherlands marry with a native Dutch spouse (Kalmijn and Van Tubergen, 2006). Therefore, we examine if the 'color line' holds in the Netherlands, and we hypothesize that *Black–White marriages have a higher divorce risk than Black–Black and White–White marriages (H3)*.

Immigrant group size is also of importance according to homogamy theory. Larger groups are better able to organize ethnically based organizations (e.g., churches, schools, and associations) in which third parties have more opportunities to control individual members (Breton, 1964). Therefore, distinct norms and values are better developed and preserved in larger immigrant groups. Also, sizeable groups may be more threatening to the native majority in comparison to small groups, as they are better capable of competing for scarce resources in society (e.g., employment or political power) (Tolsma et al., 2008). Hence, disapproval of ethnic intermarriage is more likely and more intense when a partner's ethnic group is larger. Therefore, we hypothesize that *the larger the wife's and husband's national origin group size, the higher the divorce risk for interethnic couples (H4)*.

We also hypothesize about immigrant generation. First generation immigrants were born and have been (partly) socialized in the country of origin, whereas second generation immigrants were born and socialized in the country of destination (only their parents are foreign born). It has been argued that second generation immigrants are more strongly socialized in the culture of the destination country, leading to a decrease in attachment to the values of their ethnic group (Gordon, 1964). This means that second generation immigrants develop shared cultural understandings with native peers and second generation immigrants of other groups (Alba and Nee, 1997). Thus, we hypothesize that *the effect of cultural distance on divorce risks is smaller for second generation immigrants than for first generation immigrants (H5)*.

## 2.2. Convergence theory

Scholars of convergence theory mainly focus on the question of how cultural opinions about divorce influence divorce risks of ethnic groups. The theory argues that ethnic groups hold distinctive attitudes towards marriage and divorce (Jones, 1996). Some ethnic groups have liberal opinions about divorce, which results in relatively high divorce rates. Other ethnic groups disapprove of marital dissolution and as a consequence, the divorce rate of that group will be relatively low. For example, Mexican Americans are found to have lower divorce rates than other groups in the US because their culture is highly conservative with respect to family issues (Bulanda and Brown, 2007).

Ethnic divorce propensities are developed through socialization mechanisms: individuals adopt attitudes towards divorce by transmission of norms and values during childhood and adolescence. On the one hand, individuals incorporate these norms and values as their own, making them feel less familiar with or even opposed to divorce if their ethnic group holds conservative values towards it. On the other hand, members of conservative groups are also likely to experience sanctions of family and friends (e.g., negative remarks) if they would choose to end their marriage (Kalmijn, 1998). In sum, convergence theory assumes ethnic groups to have specific divorce propensities and, as a result, to vary in divorce risks.

According to the theory, divorce propensities of the wife's and husband's ethnic group are joined in the case of an ethnic intermarriage, which results in a divorce risk that reflects divorce risks of the respective origin groups. For example, the divorce risks of Asians are relatively low, whereas the divorce risks of Whites are relatively high in the United States. Asian–White couples were subsequently found to have a higher divorce risk than mono-ethnic Asian couples, but lower than mono-ethnic White couples (Jones, 1996; Zhang and Hook, 2009).

Immigrants are not a random sample from the population in the country of origin, and potentially there could be selectivity in terms of emigration with respect to divorce propensities. Possibly, those who migrate are also those who are more likely to divorce, or migrants are less-well representative of the norms and practices of their origin culture. Nevertheless, we expect that, even when recognizing that selectivity might be at work, the divorce propensities of immigrants are affected by the divorce rates in their origin countries. Immigrants have been exposed to a certain prevalence of divorce before they immigrated. As culture is portable and persistent (Fernández, 2007), origin country divorce rates may still affect how first generation immigrants think about divorce. Accordingly, divorce propensities can again (partly) be transmitted to the second generation, from parents to children and from the immigrant community at large to the individual. Empirically, we know from previous research that the crude divorce rate in the origin country influences the divorce risks of immigrant groups in the United States (Furtado, Marcen & Sevilla-Sanz, unpublished results).

In sum, the core argument of convergence theory is that interethnic couples are influenced by divorce practices from the respective immigrant group they belong to. This means that, when a husband and wife are married, they both have their culturally-induced divorce propensity, and both forces affect the divorce risk of the couple. According to Jones (1996) ethnic divorce propensities may operate simultaneously with homogamy theory explanations (i.e., diverging preferences and negative third party influence), so that divorce rates of interethnic couples are not necessarily in between the divorce rates of the

respective origin groups. Therefore, we hypothesize that *the higher the divorce rate in the wife's origin country, the higher the divorce risk of a couple (H6a) and the higher the divorce rate in the husband's origin country, the higher the divorce risk of a couple (H6b).*

Just as for homogamy theory, it is important to differentiate between first and second generation immigrants. During their formative years, first generation immigrants have been exposed to divorce practices in their country of origin, whereas second generation immigrants have been exposed to divorce practices in the country of destination. For this reason, it is likely that second generation immigrants are more similar to natives with respect to opinions about divorce. Therefore, we hypothesize that *the effects of the divorce rate in the wife's and husband's origin country on divorce risks are smaller for second generation immigrants than for first generation immigrants (H7).*

### 2.3. Selection processes

In addition to homogamy and convergence theory, it is important to consider several selection processes into marriage because it is possible that individuals who marry exogamously have certain traits that make them less or more divorce prone than individuals who marry endogamously (Zhang and Hook, 2009). In line with previous research, we expect that age at marriage, having a young child at home, marital duration, and age heterogamy between the partners have an effect on marital stability and are important control variables in researching divorce patterns among and between ethnic groups (Hohmann-Marriot and Amato, 2008; Zhang and Hook, 2009). Moreover, there are two kinds of couples: marriages and registered partnerships. A registered partnership is, similar to a marriage, a legally recognized union. We expect registered partnerships to be less stable than marriages because a registered partnership is easier to dissolve than a marriage.

## 3. Methods

### 3.1. Data

The hypotheses will be tested using data from the Dutch municipality registers (Gemeentelijke basisadministratie 1995–2008, from hereafter GBA), made available by Statistics Netherlands, that cover the vital statistics on a yearly base of the entire Dutch population between January 1st, 1995, and January 1st, 2008. The current population statistics have only recently become available in digital format. The longitudinal population data give us the opportunity to follow newlyweds over time instead of 'survivors' that have remained married at a given time, and to study more immigrant groups than before in interethnic divorce research (e.g., Janssen, 2002).

A disadvantage of the Dutch municipality registers is that they only contain the vital statistics. Consequently, we have no information about characteristics such as education, income or self-identified skin color. Also, romantic cohabitation is not registered in the municipality registers, so we are unable to identify cohabiting couples. In the Netherlands, 20% of those who live together with a partner are cohabiting instead of being married or in a legally recognized union (Loozen and Nicolaas, 2009).

The municipality registers are individual data without a direct link to the spouse. We define partners as persons who have married on the same date and have lived together at the same address during the time of marriage (cf. Van Huis, 2007). We consider every first heterosexual marriage and registered partnership that was formed between 1995 and 2005, and refer to a registered partnership as a marriage hereafter.

In order to measure divorce, we follow couples from 1995 to 2008. The resulting average time span of 8 years to examine divorce is sufficient, as in the Netherlands, almost half of all divorces in 2007 occurred before the tenth year of marriage (Sprangers and Steenbrink, 2008).

Following to the conventional and official definition of ethnicity in the Netherlands, ethnicity is defined by the parents' country of birth (Statistics Netherlands, 2010). Of the 1,399,411 individuals that married in the Netherlands between 1995 and 2005, 192,274 have an immigrant background (at least one foreign born parent). This non-native group originates from 165 countries and 15 overseas territories (e.g., Dutch Antilles).

As we wish to refrain from arbitrarily assigning the mother's or father's origin country to people of mixed descent, we exclude couples of which at least one partner has parents from two different origin countries from our analysis (12.8% of all couples,  $n = 10,852$ ). Previous research has shown that children of mixed descent adopt either their father's ethnic identity, their mother's ethnic identity or construct dual identities (Song, 2010). It is beyond the scope of this paper to theoretically and empirically assess the marriage and divorce patterns of such a distinct group. We also excluded couples of which partners are registered under country generic classifications (e.g., immigrants born in 'other African countries') or are registered under former countries that have split into several countries (e.g., French Indochina, which has split into Vietnam, Cambodia and Laos), unless most immigrants are registered under the former country instead of the current country (e.g., Czechoslovakia). Furthermore, we excluded couples of which at least one of the partners originates from a country of which less than 20 persons married between 1995 and 2005. These latter three exclusions pertain to only 0.16% of all couples ( $n = 1299$ ), 42 countries and 14 overseas territories. Lastly, we draw a random sample of 10% among endogamously married native couples because they represent 87.3% of our data.

As a result, we will analyze 116,745 couples from 124 origin countries. Of these couples, 40.7% are mono-ethnic native couples (both partners are native Dutch), 35.1% are native-immigrant couples (one partner is native Dutch, one partner is an immigrant), 20.6% are mono-ethnic immigrant couples (both partners are immigrants from the same country) and 3.6% are interethnic immigrant couples (both partners are immigrants, but from different countries).

### 3.2. Measurements

Our dependent, independent and control variables are measured at different levels, namely at the level of the couple, at the level of the wife's and husband's origin country and at what we call the combination level of the two origin country dimensions. The couple level variables pertain to characteristics of the partners that form a couple (e.g., their marital duration). The origin country level variables are characteristics of countries that are assigned to husbands and wives originating from these countries (e.g., the divorce rate in the origin country). The combination level variables refer to differences between origin countries of partners (e.g., a different culture in the wife's and husband's origin country).

#### 3.2.1. Couple characteristics

*Divorce.* The dependent variable is whether a marriage or registered partnership ended or not, measured at a yearly interval from the 1st to the 13th year of marriage. Couples who are still married on January 1st of 2008, who are widowed or who have migrated outside the Netherlands are included up to the moment they were last observed and excluded afterwards (censored).

*At least one second generation immigrant partner.* Immigrants are of the first generation if they and their parents were born outside the Netherlands. Second generation immigrants are those who were born in the Netherlands, but who have at least one foreign born parent. In order to test if effects differ between the generations, we construct one dummy variable that indicates couples with at least one second generation partner.<sup>1</sup>

#### 3.2.2. Origin characteristics

*Divorce rate.* Ethnic divorce propensity is measured by the crude divorce rate of the respective origin country between 1992 and 1998. The crude divorce rate is the number of divorces per 1000 people in a given year and is obtained by the divorce and population data of the United Nations Statistics Division (UNSD). Unfortunately, of the 124 countries that we study, 56 countries did not provide any divorce statistic to the UNSD between 1992 and 1998. Most of them are African countries ( $n = 34$ ). We used other sources (official national statistics, scientific publications and newspapers) to impute missing values for 15 countries. A detailed overview of the sources is available from the authors on request. For the remaining 41 countries of which we found no suitable divorce statistic, we estimated the crude divorce rate by taking the mean crude divorce rate of their neighboring countries.

Our divorce rate measure is crude and therefore likely to underestimate the true effect. It should be emphasized that this is currently the best-available cross-national measure of divorce prevalence, and that previous research has relied on this measure as well (Furtado, Marcen and Sevilla-Sanz, unpublished results; Trent and South, 1989). Our main source of the divorce rate measure (the UNSD) also suffers from many missing values. In order to examine possible bias caused by our imputation strategies, we will conduct a separate analysis in which we exclude all couples of which at least one partner's origin country lacks a UNSD divorce statistic.

*Immigrant group size.* We measure immigrant group size in two different ways, depending on the analysis. In the analysis on the sub sample of interethnic immigrant couples, we compute the number of co-ethnics in the Netherlands on January 1st 2001 in the entire population for both the husband and wife. Considering that immigrant group sizes do not differ much between 1995 and 2008 (minimum change = 0%, maximum change = 5%, mean change: 0.61%), we refrain from using a time-varying measure of group size as it would add another level in our already complicated multilevel analysis. In the analysis of native-immigrant couples, we only consider the immigrant partner's group size because the Dutch have a disproportional large group size and dominate the data, resulting in a highly skewed variable. For both variables on group size we take the natural log of the immigrant group size to account for remaining skewness and to facilitate a better interpretation of the results.

#### 3.2.3. Combination characteristics

*Exogamy.* In traditional immigrant countries with a large stock of people who are beyond the second generation, self-reports are often used to elicit a subjective measure of ethnicity, which captures the ethno-racial groups to which people feel they belong (e.g., Whites, Blacks, Asians and Hispanics). In the Netherlands however, the standard practice is to define ethnicity in terms of *national origin* (cf. Kalmijn and Van Tubergen, 2006; Van Tubergen and Maas, 2007). As the most important ethnic minority groups in the Netherlands are immigrants and their children (Castles and Miller, 2003), salient groups in the Dutch society are best captured using parental country of birth. Thus, when official statistics report on and when scholars

<sup>1</sup> It can be worthwhile to distinguish between first generation immigrants who arrived in the destination country as a young child (e.g., before the age of 6) and first generation immigrants who arrived as adolescents and adults, as migrants below the age of 6 have practically been socialized in the host country. Unfortunately, our data run back to 1995 only and we are unable to assess if first generation immigrants arrived in the Netherlands as a young child.

study 'ethnic' intermarriage in the Netherlands, they mean marriages between people of different national origins and we will do so likewise.

We construct a dummy variable to indicate an interethnic couple. A couple is considered to be exogamously married if the partners' parents are born in different countries (i.e., partners have different origin countries).

*Cultural distance.* We measure cultural distance by two variables. First, we use religious difference, as religion is a key element of culture. We include a dummy variable that reflects whether the predominant religion in the wife's and husband's origin country is different or not (adherents.com; Hunter, 1999). We distinguish between Christianity, Orthodox Christianity, Sunni Islam, Shiite Islam, Hinduism, Buddhism and other religion(s). Interethnic partners whose origin countries are coded as other religion(s) are considered to have a different religion in the origin country.

Second, we use the General Gross Product (GDP) per capita as a proxy to measure the degree of individualism (opposed to collectivism) in a country. Previous research found a high correlation between GDP and Hofstede's (1980) index of individualism (e.g., Diener et al., 1995) and also in our data the correlation on the country level between GDP and Hofstede's individualism index is high ( $r = 0.73^{***}$ ,  $N_{country} = 58$ ). We measure the absolute difference in GDP per capita in US dollars in the year 2000 (Penn World Table, Heston et al., 2009) between the wife's and husband's origin country, divided by 1000\$ for practical reasons. The reason why we do not use Hofstede's more straightforward measures of culture is that the Hofstede index is available for a limited number of countries only ( $N = 58$ ). Suriname and Morocco, highly important sending immigrant countries in the Netherlands, are not included in this index. As a sensitivity analysis, we will conduct a separate analysis with Hofstede's index of culture, excluding all couples with at least one partner coming from a country that was not indexed.

*Color difference.* We do not have information about self-identified skin color. As an alternative, we use information from the 1990 United States census, the percentage of self-classified White immigrants by country, as a proxy (cf. Van Tubergen and Maas, 2007). We construct the variable color difference as the difference in the percentage of White immigrants from the wife's and husband's origin country.

### 3.2.4. Control variables

*Age at marriage of the wife* is measured in years at the date of marriage. *Age of the youngest child at home* is registered in years. We recode this into a time-varying dummy variable that reflects whether the couple has at least one child at home under the age of 6 or not for each year of marriage. We categorize *age heterogamy* of the wife and husband as follows: (1) the husband is more than 5 years older than the wife, (2) the husband is less than 2 years younger to 5 years older than the wife, (3) the husband is more than 2 years younger than the wife. We control for a *registered partnership* compared to a marriage. In order to control for marital duration, we include a linear and quadratic effect of time.

**Table 1**  
Descriptive statistics of dependent and independent variables.

	M	SD	Range	N
Dependent variable				
Divorce	0.12		0/1	116,745
Couple level				
At least 1 s generation immigrant partner	0.16		0/1	116,745
Origin country level				
Divorce rate husband	1.33	1.01	0–5.15	124
Divorce rate wife	1.33	1.01	0–5.15	124
Divorce rate immigrant partner	1.33	1.01	0–5.15	123 <sup>a</sup>
Immigrant group size husband (ln)	7.54	2.00	3.91–12.61	123 <sup>a</sup>
Immigrant group size wife (ln)	7.54	2.00	3.91–12.61	123 <sup>a</sup>
Immigrant group size immigrant partner (ln)	7.54	2.00	3.91–12.61	123 <sup>a</sup>
Combination level				
Exogamy	0.92		0/1	1250
Religious difference	0.54		0/1	1250
GDP difference	11.72	10.70	0–56.99	1250
Color difference	29.84	32.96	0–100	1250
Control variables				
Age at marriage wife	27.94	5.49	16–65	116,745
Child at home younger than 6 years <sup>b</sup>	0.12		0/1	116,745
Registered partnership	0.02		0/1	116,745
Marriage duration	8.20	3.27	1–13	116,745
Age heterogamy				
– Husband more than 5 years older	0.21		0/1	116,745
– Husband 2 years younger to 5 years older	0.67		0/1	116,745
– Husband more than 2 years younger	0.12		0/1	116,745

Data: Municipality registers (GBA) for 1995–2008, Statistics Netherlands (own calculations).

<sup>a</sup> Natives do not have a value on these variables. Therefore, the sample size is 1 observation smaller.

<sup>b</sup> In the first year of marriage.

Table 1 presents descriptive statistics for the dependent, independent, and control variables, split by level. On the couple level, the descriptive statistics refer to the 116,745 couples. On the origin country level, the descriptive statistics refer to all 124 origin countries. On the combination level of the wife's and husband's origin country, we show the descriptive statistics for combinations, in total 1250 cases.

### 3.3. Method

We make use of event history analysis to analyze the data. In order to do so, we created a person period file, resulting in 957,719 cases for 116,745 couples. The first advantage of using event history analysis is that it deals with the problem of censored information. Those who do not experience the event of divorce before 2008, who become widowed or who migrate outside the Netherlands would be treated as missing cases in standard regression analysis. In event history analysis, however, these 'censored' cases are treated as cases equally at risk to divorce up to the moment of censoring. Thus, estimates will be more accurate. Second, using event history analysis provides the possibility to take time-varying covariates into account, such as having a child at home under the age of 6.

We make use of logistic regression to estimate a model for discrete time data, which is suitable for analyzing processes that are continuous in nature, but are only observed at discrete intervals (Box-Steffensmeier and Jones, 2004). In our case, divorce is determined in years, whereas couples file for divorce at any time. As the risk of divorce will probably be low in the first years of marriage, will increase towards the tenth year of marriage and will decrease the longer couples are married (Sprangers and Steenbrink, 2008), we will capture the time dependency of divorce by controlling for a quadratic effect of marriage duration in years.

A number of variables are measured at the level of the wife's and husband's origin country. Some variables are defined in terms of the combination of the wife's and husband's origin country (which we call combination level). These observations are not independent, which violates the assumptions of standard (logistic) regression analysis (Raudenbush and Bryk, 2002; Snijders and Bosker, 1999). Multilevel analysis with cross-level effects for the wife's and husband's origin country is the preferred method to account for this dependency.

Fitting these models on our rather large dataset, however, is nearly impossible. We therefore turned to another method for dealing with dependency in the data, namely logistic regression with robust standard errors corrected for two-way clustering, applying the method proposed by Cameron and colleagues (2011).

The two-way cluster variance estimator is an extension of the standard one-way cluster variance estimator (see Cameron and Trivedi (2005) for a textbook explanation of correcting for one-way clustering). The application is as follows. Correction for one-way clustering is applied to the dimension of the husband's origin country, the wife's origin country and intersection of the two. The resulting cluster-robust variance matrices of the two dimensions (wife and husband origin country) are added and subtracted by the variance matrix of the combination level. Consequently, this information is used to adjust the standard errors for correlation between observations if they share at least one dimension.<sup>2</sup> A formal discussion of two-way clustering has been described before by Cameron and colleagues (2011).

In statistical terms, we turn from 'item-specific' to 'marginal' modeling (Neuhaus et al., 1991). It is important to keep in mind that under marginal modeling, the odds ratios represent the odds of a random couple being divorced compared with the odds of another random couple being divorced with other characteristics on the independent variables, instead of the odds of a couple being divorced compared with the odds of the same couple being divorced with other characteristics on the independent variables. Therefore, the interpretation of the coefficients differs between the approaches. For the kinds of models that we use, the coefficients under marginal modeling are *proportionally* smaller than under item-specific modeling (i.e., multilevel modeling); the proportionality constant increases with the variance components for the wife's and husband's origin country.

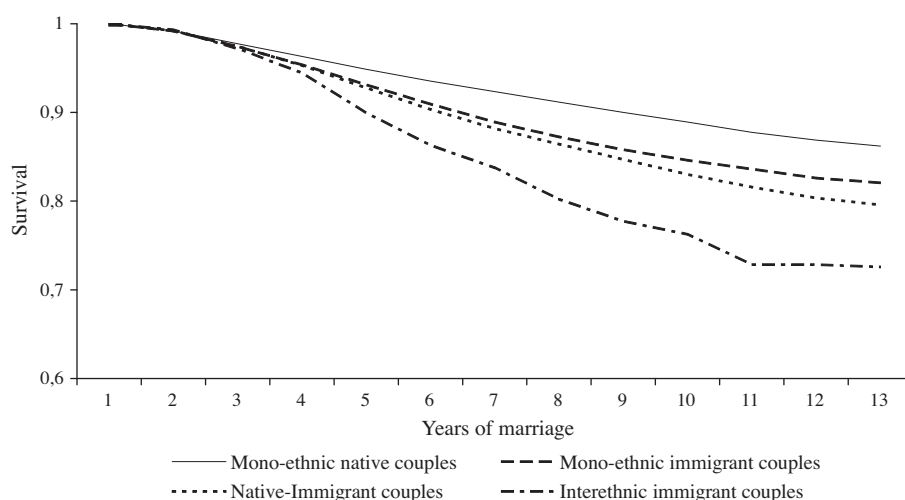
We centered all continuous variables around their mean in order to facilitate better interpretation of interaction effects. Also, all models were examined for multicollinearity problems by the Variance Inflation Factors (VIF). If the VIF of a variable exceeded 2.5, we reran the model without the particular variable to assure that its correlation with other variables did not change the results. Our conclusion is that all presented models are stable and that all non-significant effects are not due to multicollinearity.

## 4. Results

### 4.1. Descriptive findings

As a first exploration, we will present descriptive findings. Mono-ethnic native couples have the lowest divorce risk (86% are still married after the 13th year of marriage), followed by mono-ethnic immigrant couples (82%), native-immigrant couples (80%) and interethnic immigrant-immigrant couples (73%), respectively (Fig. 1).

<sup>2</sup> Two-way clustering is easy to implement in STATA, from version 11 onwards. Ready to use ado and help files are available (grobust.ado or cgmreg.ado).



Data: Municipality registers (GBA) for 1995–2008, Statistics Netherlands (own calculations)

Fig. 1. Survival curves for four types of marriages in the Netherlands, 1995–2008.

Table 2

Percentages of divorced couples within 10 years for couples married between 1995 and 1998 in the Netherlands.

	Mono-ethnic marriages <sup>a</sup>		Interethnic marriages with natives	
	% Divorced	n Marriages	% Divorced	n Marriages
Dutch	12.2	186,732		
Indonesian	12.5	295	17.2	3310
Antillean	16.2	294	22.6	393
Surinamese	27.2	1821	22.6	1453
Turkish	21.1	1414	27.6	392
Moroccan	15.7	1528	42.4	455
Other American (North and South)	21.2	33	17.3	925
Other Asian	12.1	1253	16.8	1091
Other European	11.6	902	14.6	5083
Other African	22.2	378	37.0	750
Total	12.5	194,468	19.9	15,060

Data: Municipality registers (GBA) for 1995–2008, Statistics Netherlands (own calculations).

<sup>a</sup> The subsumed categories include mono-ethnic marriages as well as interethnic marriages. However, only 3.6% of all couples is an interethnic immigrant couple. Hence, most marriages in these categories are mono-ethnic marriages.

More specifically, Table 2 illustrates divorce patterns in more detail. It shows the percentage of divorced couples within 10 years of marriage for natives, the largest five immigrant groups, and all other countries subsumed in continental categories.<sup>3</sup> Only the marriages celebrated in 1995, 1996 and 1997 are included in Table 2 because only these marriages are observed for at least 10 years.

Focusing on the mono-ethnic marriages, it can be seen that the marriages of the native Dutch are most stable (12.2% divorced), followed by the Indonesians (12.5%), Moroccans (15.7%), Netherlands Antilles (16.2%), Turkish (21.1%) and lastly the Surinamese (27.2%). Table 2 also shows that the finding in Fig. 1 holds for most of the national origin groups: interethnic couples are more likely to divorce than mono-ethnic couples. There are, however, deviations from this pattern. For example, Surinamese-Dutch couples have a divorce rate (22.6%) that is in between the divorce rate of mono-ethnic Dutch couples (12.2%) and mono-ethnic Surinamese couples (27.2%).

#### 4.2. Hypotheses testing

We tested our hypotheses using logistic regressions, of which the results are presented in Table 3. Model 1 estimates the effect of exogamy and all control variables, in Model 2 all independent variables except for immigrant group size are added and in Model 3 we include interaction effects concerning couples with at least one second generation immigrant partner. Models 4 and 5 are based on sub samples. In Model 4, we examine ethnic intermarriages between immigrants and include

<sup>3</sup> We subsumed ethnic groups into broader continental categories only for practical purposes in this table. In the analysis, all countries are treated separately.



**Table 3**

Odds ratios from multiway clustering event history models of divorce in the Netherlands, 1995–2008.

	Model 1	Model 2	Model 3	Model 4	Model 5
<b>Couple level</b>					
2nd Generation partner		1.05	1.31***	0.92	1.24
<b>Origin country level</b>					
Divorce rate husband		0.89	0.85	0.82	
Divorce rate wife		1.09**	1.13**	1.12	
Divorce rate immigrant partner					1.01
Group size husband				1.02	
Group size wife				1.12**	
Group size immigrant partner					1.00
<b>Combination level</b>					
Exogamy	1.56***	1.21 <sup>†</sup>	1.17		
Religious difference		1.27 <sup>†</sup>	1.30 <sup>†</sup>	1.41**	1.17***
GDP difference		1.01	1.01	0.97	1.03***
Color difference		1.00	1.00	1.01**	1.00
<b>Interaction effects</b>					
2nd gen <sup>a</sup> religious difference			0.75**	0.77 <sup>†</sup>	0.87
2nd gen <sup>a</sup> divorce rate husband			1.19	1.34	
2nd gen <sup>a</sup> divorce rate wife			0.96	0.82 <sup>†</sup>	
2nd gen <sup>a</sup> divorce rate immigrant p.					1.13
<b>Control variables</b>					
Age at marriage wife	0.93***	0.93***	0.93***	0.95***	0.93***
Child (<6 years)	0.47***	0.47***	0.47***	0.67***	0.52***
Registered partnership	1.69***	1.68***	1.69***	0.77	1.63***
Age heterogamy					
– <i>h</i> > 5 years older	1.05	1.04	1.04	0.92	0.98
– <i>h</i> – 2–5 years	Ref.	Ref.	Ref.	Ref.	Ref.
– <i>h</i> > 2 years younger	1.62***	1.63***	1.60***	1.91***	1.51**
Marital duration	2.00***	2.01***	2.01***	2.52***	2.07***
Marital duration <sup>a</sup> marital duration	0.95***	0.94***	0.95***	0.92***	0.94***
<b>Model characteristics</b>					
$\chi^2$ ( <i>df</i> )	7459(6)	63,897(10)	51,652(12)	16,144(14)	289,069(11)
<i>N</i> total observations	957,719	957,719	957,719	29,969	324,813
<i>N</i> couple level	116,745	116,745	116,745	4235	40,960
<i>N</i> origin country level	124	124	124	124	124
<i>N</i> combination level	1250	1250	1250	1028	239

Notes: All continuous variables are centered around their mean. 2nd gen = 2nd generation immigrant.

Data: Municipality registers (GBA) for 1995–2008, statistics Netherlands (own calculations).

<sup>†</sup>  $p < 0.05$  (one-tailed).

\*\*  $p < 0.01$  (one-tailed).

\*\*\*  $p < 0.001$  (one-tailed).

<sup>a</sup> Due to invalid (inadmissible) covariance matrices in the multiway clustering specification, we used the proposed adjustment of Cameron and Trivedi (2005) to correct for this. A byproduct of this adjustment is a reduction in the degrees of freedom.

the effect of group size. In Model 5, we replicated Model 4 for native-immigrant marriages, taking the group size and crude divorce rate of the immigrant partner for a couple.

Model 1 shows that the odds for interethnic couples to divorce are 56% higher compared to mono-ethnic couples ( $e^B = 1.56$ ). Thus, controlling for age at marriage of the wife, having a child younger than 6 years at home, having a registered partnership, age heterogamy, and marital duration, we find evidence that partners from different origin countries have a higher divorce risk than partners from the same origin country (hypothesis 1). Without these controls, the odds to divorce are 41% higher for interethnic couples (model not shown).

The odds ratio of exogamy becomes insignificant in Model 2 and Model 3, indicating that explanatory variables added in those models partly explain the higher divorce risk of interethnic couples. It appears that the odds to divorce for couples who have a different predominant religion in their origin country are 27% higher in comparison to couples who have the same predominant religion in their origin country (Model 2). Religious differences appear to be important for the risk of divorce among marriages between immigrant spouses (Model 4), and for marriages between immigrants and natives (Model 5).

Our other measure of cultural distance (i.e., the difference in the GDP per capita of the country of origin of the husband and wife) is not significant in the analysis of the entire population (Models 2 and 3) and the analysis of immigrant marriages (Model 4). However, when the difference in the GDP per capita from an immigrant spouse and the native Dutch spouse is larger, the risk of divorce is higher (Model 5). More specifically, for immigrant-native couples, the odds to divorce increase with 37% ( $1.03^{10.70}$ ) with every standard deviation increase of GDP difference in the wife's and husband's origin country ( $SD = 10.70$ ; Table 1). The effect also holds in a model without any interaction effects ( $e^B = 1.03$ ; model not shown). The results therefore largely confirm the hypothesis on cultural distance.

We ran additional analyses using Hofstede's (1980) cultural index. We found that the odds to divorce increase with 16% with every standard deviation the wife's and husband's origin country differ on Hofstede's measure of individualism (model not shown). Again, this supports our hypothesis that a larger cultural distance between spouses' origin countries increases the risk to divorce (hypothesis 2).

Hypothesis 3 was about the role of color differences. Interestingly, it appears that in the analysis involving native Dutch (Models 1–3 and Model 5), there is no evidence for increased risk when spouses differ in skin color. When looking at marriages between immigrants only, we do find a rather large effect of color differences (Model 4). The odds to divorce for interethnic immigrant couples increase with 39% ( $1.01^{32.96}$ ) with one standard deviation increase in the value of color difference ( $SD = 32.96$ ; Table 1). Hence, the color line plays a significant role for marriages between immigrants, but it does not affect the risk for divorce when one spouse is Dutch.

Hypothesis 4 stated that the risk of divorce increases with the size of the immigrant group. Model 4 shows for interethnic immigrant couples that the odds to divorce increase with 25% ( $1.12^{2.00}$ ) with a one standard deviation increase of the natural logarithm of the wife's immigrant group size ( $SD = 2.00$ ; Table 1). We find no evidence, however, that the immigrant group size of the husband has a positive effect. For native-immigrant couples, we do not find evidence either. Thus, we find partial support for hypothesis four.

Are the effects of cultural distance smaller among the second generation (hypothesis 5)? For reasons of multicollinearity, we could not test the interaction between immigrant generation and GDP difference. With respect to our other measure of cultural distance – religion – results are in line with expectations. Thus, the odds to divorce for couples without a second generation partner increase with 30% ( $e^B = 1.30$ ) if the predominant religion in the partners' origin country differs, whereas for couples with at least one second generation immigrant partner, the odds to divorce increase with only 2.5% ( $1.30 * 0.75$ ) if the predominant religion the partners' origin country differs (model 3). Hypothesis 5 is confirmed.

In line with convergence theory, it was hypothesized that the divorce rate in the country of origin positively affects the odds of divorce (hypotheses 6a and b). We find that with a one standard deviation increase of the crude divorce rate of the wife's origin country ( $SD = 1.01$ , Table 1), the odds to divorce increase with 9% (Model 2). This is a rather small effect. We do not find our hypothesized positive effect of the husband's origin country divorce rate.

As a sensitivity check, we estimated Model 2 on the basis of only those couples of whom the crude divorce rates in the wife's and husband's country of origin is reported to the UNSD. The effects of the crude divorce rates are of similar magnitude ( $e^B_{\text{divorce rate origin country husband}} = 0.94$ ;  $e^B_{\text{divorce rate origin country wife}} = 1.09^*$ ; model not shown). This leads us to the conclusion that the results are robust. Thus, the data only modestly support convergence theory. Finally, we find no clear patterns of interaction between immigrant generation and the divorce rate in the country of origin (hypothesis 7).

## 5. Discussion

In this article, we examined to what extent and why the ethnicity of partners affects the risk to divorce. We tested hypotheses derived from homogamy and convergence theory for 116,745 couples from 124 origin countries (i.e., the parental birth country), resulting in 1250 combinations of national origin. We were able to follow these couples for 8 years on average.

Our results show that, in line with previous research in the United States, interethnic couples have a higher divorce risk than mono-ethnic couples (Hohmann-Marriot and Amato, 2008; Kalmijn et al., 2005; Zhang and Hook, 2009). It has been suggested that a higher divorce risk for interethnic couples can be partly explained by the fact that a share of interethnic marriages have been conducted solely in order to obtain legal residence in the Netherlands (Kalmijn et al., 2005). Although such paper marriages do occur (Kalmijn et al., 2005), we believe our results are not heavily influenced by them. In the Netherlands, a legal residence permit can be obtained through marriage with a person having the Dutch *nationality*, which the majority of immigrants also has obtained (Oudhof, 2006). Hence, paper marriages are not reserved for interethnic marriages only, but are also likely to occur between members of the same ethnic group.

A more plausible interpretation of the higher divorce propensity of interethnic couples is provided by homogamy theory. According to this theory, differences in national origin relates to different preferences, norms, and values, which lead to a less satisfying marriage. As a further confirmation of homogamy theory, we found that partners who have a different predominant religion in their origin country are even more likely to divorce. Similarly, the difference in the degree of individualism (measured by GDP per capita) in the wife's and husband's origin country had a similar effect as religious difference, although this was only found for native-immigrant couples. This study therefore confirms the idea that besides exogamy, more cultural different partners are more likely to divorce than partners who are culturally similar. Thus, even though migration selectivity is likely to occur, we find that characteristics of the country of origin affect people's divorce risks.

With respect to intergenerational differences, we found that the influence of a different predominant religion in the origin country is weaker for second than for first generation immigrants. This indicates that exogamously married second generation immigrants have developed shared cultural understandings with native peers and other second generation immigrants.

Furthermore, we show that Black–White couples are not more likely to divorce when one of the spouses is Dutch. Whereas Zhang and Hook (2009) find marriages between Blacks and Whites to be most unstable in the United States, we only found evidence for a color line for interethnic immigrant couples (9.3% of all interethnic couples). Hence, compared

to the United States, the so called color line seems to be less prevalent in the Netherlands. This is in line with recent research on intermarriage in the Netherlands, showing that Black Caribbean immigrants are more likely to marry exogamously than other immigrants in the Netherlands (Kalmijn and Van Tubergen, 2006). Possibly because racial boundaries are stronger in other countries than in the Netherlands (Kalmijn and Van Tubergen, 2006), and Black–White intermarriages are disapproved of by third parties, we find that among immigrant couples in the Netherlands, Black–White marriages are more likely to end in divorce.

The influence of immigrant group size is not straightforward. For native-immigrant couples, a larger group size of the immigrant partner seems not to be related to higher divorce risks. For interethnic immigrant couples, the results suggest that the wife's immigrant group size is related to higher divorce risks. We find no evidence, however, that the husband's immigrant group is related to higher divorce risks. Previous research has found women to be more focused on their kin in comparison to men (Moore, 1990; Renzulli, Aldrich and Moody, 2000). As kin can be considered to be important third parties, a possible explanation for the aforementioned gender difference is that men are less likely to be influenced by third parties than women (Kalmijn, 1998). A related but alternative explanation is that couples may experience more negative third party influence from the wife's side because third parties consider ethnic exogamy more problematic for women than for men.

With regard to convergence theory, our results show that a higher divorce rate in the wife's origin country is related to higher divorce risks, but we did not find evidence that the divorce rate in the husband's origin country positively influences divorce risks. A possible explanation is that women are more likely to be influenced by kin than men, and thus, are more likely to incorporate norms about marital behavior. Another possible explanation for finding no influence of origin country divorce rates for men is that they are a selective group. Possibly, immigrant men are less-well adaptive of the norms and values of the origin country divorce practices, and due to this migration selectivity we find no effect.

In sum, hypotheses derived from homogamy theory are largely confirmed, whereas we find less consistent evidence for convergence theory. In the Netherlands, homogamy theory seems to be more empirically successful in explaining interethnic divorce than convergence theory.

We tested hypotheses derived from homogamy and convergence theory by comparing national origin groups. In traditional immigrant countries, such as the US or Canada, national origin can be less suitable if researchers are interested in marriage and divorce behavior of ethno-racial groups that are well beyond being first or second generation immigrants. Our study however, shows that a more fine-grained account of ethnicity is useful. Using pan ethnic identities, such as 'White', 'Black', 'Hispanic' and 'Asian' would miss the variety of groups within these broad categories. As an alternative to national origin, studies in traditional immigrant countries could examine if the use of ancestry, as a more detailed concept of ethnicity, results in detecting more subtle effects (cf. Chiswick and Houseworth, 2008; Furtado and Theodoropoulos, 2008).

Another conclusion of our study is that interethnic marriage should not be equated with increasing intergroup cohesion. The divorce risks for interethnic couples are higher than for mono-ethnic couples, in particular when the spouses were born and raised in different cultures. We can treat interethnic marriage as a strong indicator of cohesion when the divorce rates of interethnic couples become similar to those of mono-ethnic couples.

Future research can elaborate on our study in several ways. First, it would be interesting to consider the divorce propensities of children of ethnically mixed parents, which were omitted in our research. Second, further research could consider how serious the omission of education and income is in studies like ours that rely on register data, but which typically do not include such information. Therefore, future research using representative survey data could show if our conclusions still hold when such important variables are taken into account. Lastly, our study shows gender differences. Unfortunately, it was beyond the scope of this paper to sufficiently address this issue in more detail. As gender differences are understudied in the interethnic divorce literature (an exception is Yancey, 2009), we recommend future research to examine gender and the propensity of interethnic divorce.

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