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## **Divorce among exogamous couples: the role of language convergence**

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Martin Kolk has a PhD from Stockholm University in 2014. He is working as a researcher in demography at Stockholm University, the Institute for Future Studies in Stockholm and Åbo Akademi University. He has contributed to most fields in demography, including research on kinship, family demography, social stratification and historical demography.

Caroline Ugglå obtained her PhD from University College London (UCL) in 2015. She is trained in evolutionary anthropology, and her work lies at the intersection between demography and anthropology. After post-docs at UCL and Bristol University, she joined the demography unit at Stockholm University (SUDA) in 2016. Her current research focuses on the causes and consequences of partner choice among the mainstream population and minorities.

# **Divorce among exogamous couples: the role of language convergence**

Jan Saarela, Martin Kolk, Caroline Ugglå

## **Abstract**

This is the first study to use longitudinal population register data to illustrate that marital stability may relate to the adoption of the spouse's language. The paper draws on theories of boundary shifting and boundary crossing to examine two main ancestral groups in Finland, Finnish speakers and Swedish speakers, between whom intermarriage is common. Administrative changes in how the question about language/ethnicity was registered between the censuses of 1975 and 1980 make it possible to distinguish between persons who are concordant or discordant on the main language used and ethnic affiliation. Using data on the entire married population, and adjusting for several individual and couple characteristics, we estimate the couples' divorce risk as a function of language convergence with Cox regressions. Discordance in terms of adopting the Finnish language used by the partner is associated with a higher divorce risk, as compared with couples who are exogamous in terms of both language use and ethnic affiliation. Adopting the Swedish language, on the other hand, is associated with a slightly reduced divorce risk. Thus, these data provide some evidence that marital stability may relate to language convergence.

## **Keywords**

Language use, ethnicity, divorce, exogamous couples, population registers

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## **Conflict of interest**

The authors declare no conflict of interest.

# **Divorce among exogamous couples: the role of language convergence**

## **Introduction**

Understanding what factors make a couple compatible is a topic of enduring interest in the social sciences. It is well-established that endogamous unions where partners share characteristics such as ethnicity, race, education or religion generally are preferred by individuals, and are more likely stable (Qian and Lichter, 2007; Smith et al., 2012). Sociological theorizing on this topic has suggested that when partners share values, belief systems and communication style, conflicts are less likely to arrive and easier to resolve. Partaking in activities together and sharing values ease communication and increase the likelihood of common goals (Dribe and Lundh, 2012). Assortative mating suggests that individuals frequently choose partners who are like themselves on key traits. This is likely due to preferences, or because third-party norms prescribe shared traits, such as ethnicity (Kalmijn, 1998). Opportunities to meet partners who are similar or dissimilar on key traits also play a part in patterns for endogamous marriages (Kalmijn and Flap, 2001; Lichter and Kian, 2019).

Various forms of intermarriage have nevertheless become more common and, as a phenomenon, intermarriage is of high sociological relevance. One dominant strand of the intermarriage literature considers the causes and consequences of marriages across ethnic boundaries, frequently between natives and immigrants in the context of integration and assimilation (Kalmijn and van Tubergen, 2006; Milewski and Kulu, 2014). Marriage is sometimes regarded as the ultimate measure of integration, and a proof of acceptance of individuals across social boundaries (Alba and Foner, 2015). Intermarriage across education, age and religion in the mainstream population has received large attention, as it is important to understand how groups in society are divided by social categories, and how this division may change over time. Thus, intermarriage portrays boundaries between groups in society, but it also has the potential for cultural and social change (Kalmijn, 1991).

Intermarriage may precipitate a change in an individual's language use or religious affiliation, and be influenced by practical concerns that govern how the partners in a couple communicate with each other and the rest of society (Musick and Wilson, 1995). Compared to the ample literature on exogamous marriage and divorce, less is known about the divorce risk of exogamous marriages when one partner acquires parts of the other partner's traits, such as the language spoken. This scarcity may be due to both a lack of conceptual framework and a lack of data from appropriate contexts (Petts and Petts, 2019). In this paper, we draw on theories of boundary shifting and boundary crossing to gain an insight into how the adoption of the partner's language may affect divorce risk.

When individuals are reclassified between censuses, they may have moved across boundaries, meaning that they have changed identity, but the group boundaries may also have changed across individuals, meaning that the identity or identification has shifted meaning (Loveman and Muniz, 2007). In our study context, Finland, intermarriage is common between the two main native ethnic groups; Finnish speakers, who account for barely 90% of the total population, and Swedish speakers, who amount to just over 5%. We exploit a rephrasing of the question on language/ethnicity, from the main language spoken in the 1975 (and 1970) census, to mother tongue (or ethnicity, or ethnolinguistic affiliation) in the 1980 census (see Finnäs, 1986). The main language refers to the language mainly used by an individual in his or her everyday life. Since most people spend most of their time at or close to their home, main language generally captures how they communicate with close and nearby persons, including those in the same family. For married couples with two distinct languages (Finnish and Swedish), it is common that each partner speaks his/her dominant (own) language, or that someone switches at occasions when necessary (Tandefelt, 1988). Starting with the 1980 census, or actually already in 1977, Statistics Finland began to identify persons by their unique mother tongue, which should be interpreted as close-to-fixed ethnicity or ethnolinguistic identity

(Finnäs, 1986). The new approach better served the authorities when planning and implementing services to both native groups in the country. The rephrasing of the census question can be described as boundary shifting, whereby the definition of categorical membership changed. Persons who are discordant on the two measurements can be considered as having crossed a boundary from their ethnicity of origin. We can identify some couples where individuals have adopted the language spoken by the partner. Our aim is to examine the association between such boundary crossing and the couple's divorce risk.

Predictions for how such discordance may be associated with divorce can be made in both directions. On one hand, it can be hypothesized that exogamous couples who have converged to a shared language have greater marital stability, due to their ability to negotiate and share communication style. Homogamy theory suggests that they should be less likely to divorce, assuming that adopting the partner's language reflects actual convergence on a focal trait, like sharing the religious denomination or citizenship (Zhang and Van Hook, 2009). In other words, they may run a lower divorce risk because they become more aligned on communication style, values, or beliefs. Conversely, it is possible that couples where one individual has eschewed a key aspect of his or her identity are qualitatively different from couples that start out as exogamous on this trait. They may then be less stable due to higher stress or loss of self-identity. Moreover, individuals who cross boundaries may receive less family support if they are seen as abandoning their original group identity, or be met with skepticism from their new community. Such mechanisms may exist even if they do not originate in explicit disapproval or negative feelings. For instance, lesser support may simply reflect that someone has fewer interactions with members of one's childhood community and, thus, draw less on their social resources. Being able to combine an own identity with shared commitment to marriage is central for relationship quality (Askham, 1976). Another interpretation would, therefore, be that

it is harder to maintain a separate distinct identity in couples where one partner is discordant on language use and ethnicity.

We do not seek to determine the precise mechanisms resulting in higher or lower divorce risk. Rather, our contribution lies in applying the concepts of ethnic boundary shifting and crossing to marital stability, to identify the prevalence of divorce in different kinds of exogamous couples. We can do this by identifying married couples in which one partner has adopted the language of the other, and relate it to the couple's subsequent divorce risk. Our results suggest that the boundary crossing is associated with marital stability. We also uncover that the association tends to be negative if the adoption is toward the Finnish language, and positive if it is toward the Swedish language.

Our study has three key strengths. First, we provide the first analysis based on longitudinal population register data to exploit how language use within ethnically intermarried couples is linked with marital stability. Second, because our data consist of linked national registers of the entire population residing in Finland, we can control for a range of factors that might contribute to the discordance between language use and ethnolinguistic affiliation, as well as to the divorce risk, such as the share of co-ethnic persons in the municipality of residence, whether the study persons had changed this local environment since birth, and several other demographic and socioeconomic control variables. This approach not only avoids bias from several known determinants of divorce (Lyngstad and Jalovaara, 2010), but also taps into the regionally differentiated ethnic-group boundaries in Finland (Saarela, 2021). Third, much of the literature on boundary crossing, shifting and blurring has been focused on immigrant integration and segmented assimilation (Alba and Nee, 2003; Alba and Foner, 2015). Our study, in contrast, explores two ancestral native groups, and is not concerned with so-called visible minorities or migrants that might be subject to discrimination and stress associated with structural racism, nor large socioeconomic differentials. It thereby contributes with a perspective on factors that

may affect marital stability for a context with two distinct ethnic groups who have equal standing and are free of constraints related to immigration or integration processes.

### **Boundary shifting, crossing and blurring**

We draw on typologies that distinguish between boundary crossing, shifting and blurring, as outlined by Zolberg and Woon (1999). These were developed with regard to the outcomes between native and immigrant populations in western countries. Boundary crossing is when an individual adopts certain traits or behaviours of another group. Akin to assimilation of individuals, they cross over to the other category, but the categorical boundaries themselves remain intact. In Zolberg and Woon's description, examples of boundary crossing could be an immigrant who abandons his or her mother tongue in favour of the language spoken in the host country, religious conversion, or naturalization. Boundary shifting, on the other hand, is when categorical membership shifts across individuals. The line that separates ethnic or other groups is then redrawn, and some persons shift the group to which they belong. Boundary shifting can therefore be described as a more fundamental process than boundary crossing.

Ethnic boundary-making is considered to require agency (Barth, 1994; Emirbayer and Mische, 1998; Lamont and Molnár, 2002). This may be particularly true in our case, where Finnish speakers and Swedish speakers in Finland share many everyday aspects, where ethnicity is strongly linked to language and notably less to other ethnic markers, such as religion or different traditions. Under such circumstances, changing the everyday language may be associated with departing from your own identity. Jenkins (2000) has argued that identity is formed at three levels: the individual, interactional and institutional. These levels are often interconnected social and political structures, and their shifts are vital to the process (Cote, 1996). Ethnicity can be constructed depending on whether it is based on linguistic or cultural behaviours (Cornell and Hartmann, 1998). However, social identity may change also as a result



of a shift in the categorical membership defined by the government (Alba, 2016). As an example, Loveman and Muniz (2007) studied why there was an increase in the proportion of White individuals in Puerto Rico between the 1910 and 1920 censuses. They noted a considerable increase in the enumerated White population across these two waves, which was not explained primarily by relatively higher birth rates, lower immigration or lower intermarriage rates. Instead, they found that the “whitening” came about due to boundary shifting, that is, a change in the definition of who was defined as White between the censuses, as it widened to comprise individuals who had previously been categorized differently. This kind of boundary shifting is also what we are concerned with in this paper, in terms of main language use vs. ethnicity.

The concept of boundary blurring, in contrast, is not concerned with group identity of individuals, but with the actual boundaries of the categories themselves (Lewin-Epstein and Cohen, 2019). Mixed marriages certainly contribute to the blurring or erosion of ethnic boundaries (Alba, 2005). Offspring of intermarriages, who are not explicitly studied here, generally have more blurred lines than others (Song, 2010). Blurring may be particularly important if there is a discrepancy between a person’s ethnic identity and the language that is de-facto used in everyday situations within exogamous unions. One spouse may have mainly given up the language shared with his or her ethnic community for the language of the spouse. Such couples are in focus in this paper.

Alba and Nee (2003) have emphasized that the distinctions between boundary crossing and boundary shifting are merely ideal types, meaning that it is difficult to disentangle them in study design. The dynamics of social boundaries are therefore not well understood. While the boundary process as a conceptual framework has served a great purpose within sociology, efforts that distinguish between crossing, shifting and blurring are often absent (Loveman and

Muniz, 2007). For boundary shifting to occur, considerable boundary crossing and blurring generally has to predate it (Zolberg and Woon, 1999).

Some couples manage exogamy by focusing on the commonalities they share, rather than on their differences, although marriage to an individual with different ethnicity is particularly pertinent for identification (Özateşler-Ülkücan, 2020). There is some, but not overwhelming evidence, to suggest a positive correlation between identity shift and divorce risk, and particularly so if it is the woman who changes her identity (Petts and Petts, 2019). This interrelation may be induced by increased stress of being perceived as not real by others, or from loss of the original identity.

Ethnicity, religion and race comprise different aspects of identity, with some similarities but also contrasts. Religious intermarriage and its association with marital stability has been studied for long (Landis, 1949; Burchinal and Chancellor, 1963). These studies often suffer from the problem that highly religious individuals in general are less likely to divorce (Lehrer and Chiswick, 1993; Lehrer, 2009). Religious shifts at marriage, which sometimes are prescribed by an institution, may be of different nature than changes the couple have to handle themselves, such as one partner's use of the other partner's language. Individuals for whom the own ethnic community is more important are presumably more likely to pressure the partner to adopt their trait. Selection is likely at play here, because the individuals most adamant on their own trait are more likely to marry a spouse with the same background, rather than one who must converge on language use (Lichter and Qian, 2019). In contrast with religion and race, language use within a couple may be negotiated because of its practical nature, and a marriage depends on communication that can take place in many ways, which we cannot distinguish between in this paper.

We view the process of adopting the language reported spoken by the partner as boundary crossing, which is induced by boundary shifting, that is, by a change in the question on

language/ethnicity between censuses. The change comes from a reconceptualization in the Finnish population register, from the main language in the 1975 census to ethnicity in the 1980 census. Boundary crossing is considered to have occurred if an individual born into one ethnic group had adopted the language spoken by the spouse. If there is a compromise or negotiation of language use for intermarried couples, boundary crossing may affect the divorce risk.

## **Context**

Finland is home to two native ethnic groups, Finnish speakers and Swedish speakers, who make up barely 90% and just over 5% of the population, respectively. Sweden and Finland have a long shared history, and Finnish did not have the status of an official language during Swedish rule, which ended in 1809. Since 1917, when Finland became independent from Russia, the two groups enjoy the same constitutional rights. There is still geographical segregation, dating back to when Finland was part of Sweden. The approximately 290,000 Swedish speakers reside predominantly along the western and southern coastlines, including the Helsinki metropolitan area. Unlike the case of many immigrant minority groups, they are not socioeconomically disadvantaged, stigmatized, nor do they differ in religious beliefs from the Finnish-speaking majority population (Saarela and Finnäs, 2014). There is a parallel school system in Swedish, a Swedish-speaking brigade of the army, and Swedish media and cultural institutions that are influential for the identity of the Swedish speakers. The Finnish language is part of the curriculum in Swedish schools, and the Swedish language in Finnish schools, though in practice full bilingualism is much more common among Swedish speakers (O'Leary and Finnäs, 2002).

Notwithstanding the Swedish- and Finnish-speaking divide, until the early 1990s Finland was, in most aspects, a highly homogenous society with a small foreign-born population of about 25,000 individuals. In recent decades, this population has grown more than tenfold, but remains low as compared with the other Nordic countries. Around 1900, Swedish speakers

made up 13% of the population, but has since then experienced a steady decline in relative, but not absolute, numbers. Some decades ago the reduction was induced by low birth rates, outmigration and an increased intermarriage rate, but more recently foremost because of the immigration of foreign-born persons. Overall, Finnish and Swedish speakers clearly fulfill the criteria commonly held for defining distinct ethnic groups (Gordon, 1964; Barth, 1969). Swedish speakers generally identify themselves as a separate ethnic group with a strong relation to Sweden and a Scandinavian heritage, though simultaneously maintaining a strong affiliation to their homeland, a bilingual Finnish state, and a Finnish national identity. In the national population register, individuals are allowed to have only one mother tongue, or ethnic affiliation, which is recorded recently after birth. Few individuals, and in practice only those with a mixed background, change it later in their life (Obućina and Saarela, 2017). In the population studied here, only 0.06% of the individuals had changed their ethnic affiliation. The change in the registration procedure between the censuses of 1975 and 1980 is an anomaly, however.

Before the 1980s, the majority of children of mixed marriages were registered as Finnish speakers. This behaviour has gradually changed, and nowadays about two thirds of the children of mixed marriages are registered as Swedish speakers (Saarela, 2021). Currently, about 40% of Swedish speakers marry a Finnish-speaking partner. The pattern in exogamous marriages is gendered; it is more common for a Swedish-speaking man to marry a Finnish-speaking woman than vice versa (Saarela et al., 2020). Higher education, otherwise commonly found to be a predictor of exogamous marriage, is not predictive of Swedish-Finnish intermarriage in Finland. On the contrary, highly educated Swedish-speaking individuals are more likely to marry endogamously (O'Leary and Finnäs, 2002). Thus, it seems that the modern-day Swedish speakers see higher instrumental value than Finnish speakers in passing on their group identity to their children, and especially so when they have higher levels of education.

Although Finland is continuously experiencing boundary blurring between previously more distinct Swedish-speaking and Finnish-speaking categories (Saarela et al., 2020), the above described development has happened in tandem with a move away from the perception that it is confusing for children to learn two languages simultaneously (Saarela and Finnäs, 2016). Couples studied in this paper, however, come from birth cohorts raised during a period when the children of mixed marriages largely became unilingual. This means that they were raised learning one dominant language and within the corresponding ethnic community. Boundary blurring caused by mixed identity is therefore not likely to be highly influential for our study couples, although we cannot study this issue explicitly due to data constraints.

A notable difference between Finnish speakers and Swedish speakers in demographic terms, and of particular relevance for our study, is in their divorce risk. The prevalence of divorce is lowest among endogamous Swedish couples, higher among endogamous Finnish couples, and the highest among ethnically exogamous couples (Finnäs, 1997; Saarela and Finnäs, 2014). The lower divorce rate of endogamous Swedish couples cannot be explained by demographic or socioeconomic factors, and have therefore become somewhat of a conundrum. It has been hypothesized that part of the explanation for the higher marital stability in the Swedish-speaking community is related to social integration and close-knit community structures, enabled by low residential mobility and strong social and cultural institutions (Saarela and Finnäs, 2018). However, opportunities to find new partners within a smaller ethnic community are fewer, and so explanations may also be linked to partner market dynamics. We are able to shed further light on the divorce gradient by separating couples not only by the ethnic affiliation of each spouse, but also by concordance or discordance between main language and ethnicity of each person in the couple.

Socioeconomic, demographic and contextual factors associated with divorce in Finland are generally the same as those in other similar countries (Lyngstad and Jalovaara, 2010; Härkönen,

2014). The divorce risk is highest in the first few years after marriage, it is higher for couples who marry young, when the age difference is large, for previously married, for couples with older children, for those who are discordant on social position, and for those in a poor economic position. The antecedents of divorce will be discussed in somewhat more detail below, although the emphasis is on the ethnolinguistic divorce gradient.

### **Data and methods**

The data used contain all married couples in the censuses of the total population of Finland in 1975 and 1980. Each person can be observed longitudinally at the one-year level during the period 1971-2019, for which there is information about all marriages, divorces, deaths and moves abroad. Year of marriage, also before 1971, and year of divorce of these couples are known.

Analyses are restricted to couples who were married in both 1975 and 1980, meaning that the couple was intact at the time of the two censuses that are central to our identification strategy. We have performed parallel analyses for couples who were married in 1975, irrespective of whether they were married in 1980. The results are similar to those reported here (see the Online Supplementary Material), meaning that selection out of marriage and, thus, the inclusion of longer marriage durations, does not affect the results reported to any notable degree.

In the 1975 census, the question on “main language” (*pääkieli* in Finnish, *huvudspråk* in Swedish) referred to the language mainly used by the individual, which was Finnish, Swedish, or some other. In the 1980 census, it was substituted with “mother tongue” (*äidinkieli* in Finnish, *modersmål* in Swedish), which should be understood as ethnicity or ethnolinguistic affiliation, with the alternatives Finnish, Swedish, or some other. Since all data are at the

individual level, we can compare the categorisations across the censuses for each person, within each couple.

All analyses are concerned with couples in which both the wife and the husband were either Finnish or Swedish in 1975. They constitute 99.7% of all couples in the data. Among these, only 0.6% consist of couples where either the wife or the husband had another affiliation than Finnish or Swedish in 1980. They are excluded from further analysis. In total, we then have 832,992 couples. Their total number of divorces in the period 1981–2019 is 80,002, and the total number of couple years is 18,314,695. There are in total 533,054 couples who are censored due to spousal death or migration abroad, whereof deaths account for more than 98% of all these events.

In focus is the variable that combines *main language* in 1975 and *ethnicity* in 1980 for each person in the data. We are particularly interested in individual changes across the censuses within each couple. The taxonomy implies that this key variable have 16 categories, as described in Table 1. The first letter refers to the wife and the second letter to the husband. “S” is for Swedish and “F” is for Finnish. Most couples are naturally found on the main diagonal (marked with light grey), meaning that both the wife and the husband were defined in the same way in 1975 and 1980. Couples in which both the wife and the husband were “Finnish” in both censuses account for 91.5% of all couples, and those in which both were “Swedish” in both censuses for 5.4%. There are substantially more couples with Finnish woman and Swedish man (in both censuses) than couples with Swedish woman and Finnish man (in both censuses), or 11,083 vs. 7,321.

(Table 1 about here)

For our purposes, the most interesting categories consist of those in which both the wife and the husband had the main language either Finnish or Swedish in 1975, but one was differently defined in 1980 (marked with dark grey). Among the 766,000 couples where both had Finnish

as the main language in 1975, there are about equally many, or roughly 2,200 each, where the wife was defined with Swedish ethnicity in 1980 as where the husband was defined with Swedish ethnicity in 1980. These are couples in which both the wife and the husband mainly have spoken Finnish, but had a different ethnic affiliation, meaning that one had adopted the other's Finnish language. The number of couples where both had Swedish as main language in 1975 and one was defined with Finnish ethnicity in 1980 are notably fewer. The man was differently categorised in 1980 for only 270 of these, and the woman for 865. These are couples in which either the husband or the wife had adopted the partner's Swedish language.

The other eight categories, off the main diagonal (indicated with less marked numbers), contain relatively few couples, and are beyond the scope of our theoretical framework. They consist of two main groups. One contains couples where the wife and the husband had different main languages in 1975 and one or both were categorised in another way on ethnicity in 1980. The other main group consists of couples where both had the same main language in 1975 and both had the same ethnicity in 1980, but both were also differently categorised across the two censuses. For the sake of completeness and readability, we have included these categories into the analyses, but their results are not reported.

The divorce rate of endogamous Finnish couples (FF\_FF) is roughly twice that of endogamous Swedish couples (SS\_SS), while the divorce rate of exogamous couples (SF\_SF and FS\_FS) is even higher than that of endogamous Finnish couples (Table 2). These differentials corroborate findings from previous research (Finnäs, 1997; Saarela and Finnäs, 2014; 2018). Furthermore, there is a notable level difference between couples where both the wife and the husband had Finnish as main language in 1975 but one was categorised as Swedish in 1980 (FF\_SF and FF\_FS), on the one hand, and couples where both the wife and the husband had Swedish as main language in 1975 but one was defined as Finnish in 1980 (SS\_SF and SS\_FS), on the other hand. The divorce rate of the former two categories is almost as high as



that of exogamous couples (SF\_SF and FS\_FS), while that of the latter two groups is notably smaller, or in between that endogamous Swedish couples (SS\_SS) and that of endogamous Finnish couples (FF\_FF).

(Table 2 about here)

To assess whether these differentials relate to demographic, socioeconomic or contextual factors, we use several control variables that are known to affect the divorce risk. They are marriage duration, couple's mean age at marriage, age difference in the couple, number of children in combination with the age of the youngest child, combinations of educational level of the wife and the husband, housing tenure, whether previously married, combinations of the religious congregation of the wife and the husband, proportion Swedish speakers in the municipality of residence, and whether somebody had changed ethnolinguistic environment since birth (that is, changed category on the proportion Swedish speakers in the municipality). All these variables are measured at the end of 1980, which is at the same time ethnicity is measured. They are described in Table 3, together with the distributions within each of the eight key categories of the variable that combines main language and ethnicity.

(Table 3 about here)

Swedish speakers live concentrated along the south and west coast of Finland. Inter-marriage has been more common in large cities, and particularly the Helsinki metropolitan area, than elsewhere. Swedish speakers have more stable marriages than Finnish speakers. Distributional differences across the categories therefore come as no surprise. Our main question is rather if they can explain the differences in the divorce risk across language/ethnicity categories. To study this issue, we run Cox regressions for the divorce risk, in which time starts at the end of 1980. Couples are right-censored at the time of spousal death or migration abroad, and at the end of the observation period in 2019, whichever comes first. We stepwise control for additional variables in the order as they are listed in Table 3, and focus on reporting the ratios

of the hazard of divorce between the categories of the variable that combines main language and ethnicity. Analyses are performed with SPSS 27, within Statistics Finland's remote access system Fiona, using the contract number TK-52-694-18.

## **Results**

Results of the Cox regressions are summarised in Table 4. Hazard ratios of divorce when no control variables are included naturally correspond to the differences in divorce rate in Table 2. We see that the endogamous Finnish couples have a hazard of divorce that is 2.04 that of endogamous Swedish couples, while that of exogamous couples with Finnish woman and Swedish man is 2.46, and that of exogamous couples with Swedish woman and Finnish man is 2.68. Couples where both spouses mainly speak Swedish but have different ethnic affiliation has a hazard of divorce that is 1.36 that of endogamous Swedish couples. Those where both mainly speak Finnish but have different ethnic affiliation has a hazard of divorce that is 2.37–2.39 that of endogamous Swedish couples. Whether it is the wife or the husband who is discordant in terms of main language vs. ethnicity does not, consequently, seem to matter.

(Table 4 about here)

When marriage duration in 1980 is entered, hazard ratios for the differences between endogamous and exogamous categories are reduced. Endogamous Finnish couples have a divorce risk of 1.66 that of endogamous Swedish couples, while that of exogamous couples with Finnish woman and Swedish man is 1.87, and that of exogamous couples with Swedish woman and Finnish man is 1.75. The relative divorce risk of couples where both speak Finnish but have different ethnicity remains high, or about 2.20, which is considerably higher than that of exogamous couples where both the wife and the husband are concordant across censuses on main language and ethnicity, which is about 1.80. Couples where both individuals speak

Swedish but have different ethnicity remain at a somewhat higher divorce risk, or about 1.35 that of endogamous Swedish couples.

These relative differences are only slightly affected by the mean age at marriage and the age difference of the couple. When accounting for these variables, the divorce risk of endogamous Finnish couples is 1.57 that of endogamous Swedish couples. That of exogamous couples is about 1.85, irrespective of whether it is the wife or the husband who is ethnically Finnish or Swedish. The divorce risk of couples where both speak Finnish but one is ethnically Swedish is approximately 2.20 that of endogamous couples, while that of couples where both speak Swedish but one is ethnically Finnish is approximately 1.35.

Additional controls for the number of children and age of the youngest child, and wife's and husband's educational level, do not affect these hazard ratios. Housing tenure, previous marriage and congregation reduce the high relative divorce risk of couples where both speak Finnish but one is ethnically Swedish with roughly 10% (1.99/2.16 and 1.95/2.19), and that of couples where both speak Swedish but one is ethnically Finnish with roughly 4% (1.27/1.33 and 1.37/1.41). Relative differences between endogamous and exogamous categories are reduced by 4–8% (1.71/1.85, 1.72/1.83 and 1.50/1.57).

The single variable with the highest explanatory power is the proportion of Swedish speakers in the municipality of residence. This variable may be considered a rough proxy for how much (or actually little) Finnish is spoken in an individual's immediate environment and neighbourhood, including at work and hobbies, and with nearby friends. The variable explains some, but far from all, of the differences in divorce risk across language/ethnic categories. When it is added, the high relative divorce risk of couples where both speak Finnish but one is ethnically Swedish is reduced by another 15% (1.68/1.99 and 1.63/1.95), and that of couples where both speak Swedish but one is ethnically Finnish with roughly 8% (1.16/1.27 and

1.28/1.37). Relative differences between endogamous and exogamous categories are further reduced by 4–8% (1.48/1.71, 1.49/1.72 and 1.39/1.50).

When the variable that captures a change in the ethnolinguistic environment since birth is finally added, the relative differentials in divorce risk are reduced further, but only with a few percentage points. Thus, when demographic, socioeconomic and contextual variables are controlled for, there remain some differences in the divorce risk by main language and ethnicity. As compared to endogamous Swedish couples, endogamous Finnish couples have 35% higher divorce risk, exogamous couples 45% higher, and couples where both the wife and the husband speak Finnish but one is ethnically Swedish about 60% higher. The divorce risk of couples where both the wife and the husband speak Swedish but one is ethnically Finnish is about 20% higher, but these estimates come with low statistical power.

To study if different categories of exogamous couples differ in divorce risks, the reference category is switched to be exogamous couples with Finnish wife and Swedish husband. We then see that, as compared with this reference group, couples where one partner had adopted the other's Finnish language has roughly 10% higher divorce risk, while couples where one partner had adopted the other's Swedish language has roughly 15% lower divorce risk. Since we use data on the total population, significance should not be slavishly interpreted in terms of statistical inference, but rather as reflecting the overall spread of the estimates.

Nevertheless, estimates differ marginally according to whether it is the wife or the husband who had adopted the partner's language. In the final step, we therefore merge categories that distinguish whether it is the wife or the husband who is Swedish (or Finnish). The results are reported at the bottom of Table 4. They suggest that, as compared with exogamous couples where both the wife and the husband are concordant across censuses on main language and ethnicity, endogamous Swedish couples have 31% lower divorce risk, endogamous Finnish couples have 7% lower divorce risk, and couples where both speak Finnish but one is ethnically

Swedish have 11% higher divorce risk. The divorce risk of couples where both speak Swedish but one is ethnically Finnish is 16% lower, although not statistically significant due to few such couples.

Adopting the partner's Finnish language is consequently associated with a markup of just over 10% on the divorce risk, as compared with exogamous couples with no adoption of the spouse's language. Adopting the partner's Swedish language, on the other hand, is associated with a reduction of the divorce risk with just over 10%, as compared with exogamous couples with no adoption of the spouse's language.

Table 5 reports the estimates for the effects of the control variables from the fully adjusted model, and are presented for the sake of completeness. These are very much in line with expectations and previous research, and will therefore not be discussed at length. The divorce risk is found to decrease with marriage duration and mean age at marriage. It is lower when the age difference between the man and the woman is 0–4 years, as compared when the man is older than so, or if the woman is older than the man. Having children above six years of age generally increases the divorce risk, and so does having children as compared to not having children. This finding should be interpreted from the perspective that these couples have been married for at least five years when entering the study window; the difference is less emphasised if couples with shorter marriage durations are included (see the Online Supplementary Material). Couples where both individuals have primary education have a lower divorce risk than others, as do those who own their accommodation, and those where no one has been previously married. The divorce risk is elevated if any spouse does not belong to the Evangelic Lutheran church, and particularly marked if the spouses have separate religious affiliations. The divorce risk is lowest in highly Swedish-dominated geographical areas, and highest in areas where there is a considerable degree of ethnic mix. Changed ethnolinguistic environment since

birth, irrespective if it is the wife, the husband or both who had moved, is associated with an elevated divorce risk.

(Table 5 about here)

## **Discussion**

We have examined if married individuals who are discordant on the language mainly used and ethnicity differ in divorce risks from those who are concordant on these characteristics. The study has utilised a setting where the question on language/ethnicity in Finland was rephrased, from the main language used in the 1975 census to ethnicity in the 1980 census. A change in the administrative population-registration procedure thus allowed us to disentangle the often interwoven concepts of boundary crossing, shifting and blurring. While they might be inherently intertwined, we believe that through the study design, this paper has offered some novel insight into how they may relate to divorce risks across different types of intermarriages. Our findings have implications both for the literature on intermarriage (Kalmijn, 1998), studies on boundary shifting and crossing (Zolberg and Woon, 1999; Alba and Nee, 2003), and for family sociological perspectives on identify formation within marriages (Askham, 1976).

The results are broadly comparable with much of the intermarriage literature, in that we observe an advantage in marital stability among endogamous unions (Kalmijn, 1998). They are also consistent with previous research on marriage and ethnicity in Finland, in that we observe much more stable endogamous Swedish unions than endogamous Finnish unions, and that exogamous Finnish-Swedish unions are even less stable than endogamous Finnish unions (Saarela and Finnäs, 2014).

The novelty here is that we can further distinguish between couples where one spouse has, or not has adopted, the language of the spouse. Doing so, we find some variation in divorce risk related to a spouse's discordance between the language mainly used and ethnicity. Adopting

the Finnish language used by the partner is associated with an additional markup on the divorce risk, while adopting the Swedish language used by the partner is associated with a lower divorce risk, as compared to couples with non-discordant individuals. Thus, we observe a negative effect of discordance on marital stability as compared to endogamous Finnish unions, but discordance towards Swedish language use have some advantage similar to that of endogamous Swedish unions. Presumably, some unobserved sociocultural circumstances related to the overall low divorce rate of Swedish speakers moderate part of the negative effect of discordance on marital stability. It needs to be stressed, however, that even though we have used data on the entire married population, the number of couples with a discordant partner is few, and particularly those with discordance towards the Swedish language. Although the effect sizes are reasonably large, these circumstances will naturally affect the statistical power of the estimates.

Another important finding is that we see practically no differences by gender of the discordant partner. Even though the frequencies of different types of intermarriage differ in our study context, associations between discordance/concordance and the divorce risk are largely the same across different combinations of gender and language/ethnicity. This is in contrast to arguments which say that many negotiations of shared identity within mixed marriages are strongly gendered (Härkönen, 2014; Kalmijn, 1998).

The results have several important implications. Adopting the spouse's language, and thus part of his or her identity, which one may assume often, but not always, is done somewhat reluctantly, is associated with marital stability. Such discrepancy between concordant and discordant exogamous couples may bring additional insights into *why* exogamous unions tend to be more unstable than endogamous ones. Using an everyday language that is discordant with one's identity is plausibly associated with the degree of satisfaction with the status quo in the marriage, and it may reflect a position where marital tensions affect marriage stability. We find

that individuals who maintain their Swedish identity in terms of language use tend to have relatively more stable marriages, while the opposite is the case for the Finnish language. This would be consistent with arguments saying that upholding robust social networks and identities outside marriage affects marital quality, and for both wives and husbands (Askham, 1976). Another interpretation relates to the concept of boundary blurring, or loss of the original identity, meaning that an individual's discordant identities may depend on the degree of stress and satisfaction within the marriage (Petts and Petts, 2019).

Our study setting has been unusual in the sense that register-based data seldom provide possibilities to evaluate discordance between language use and ethnicity at the individual level and, thus, within couples. In much of the intermarriage literature, shared language or ethnic identity is inseparable from issues related to socioeconomic or cultural integration into privileged groups. The context here, with groups that have equal status position, provide some more universal insights into the intermarriage literature on group identity and relationship stability. Because our study case is quite unusual and different from most of the research in the field, evaluating the external validity of our findings will require future empirical and theoretical work. In addition, results of studies on intermarriage tend to be highly context-dependent (Alba, 2015; Alba and Foner, 2015). The present study context with intermarriage between native ethnic/language groups corresponds to some countries, or regions of them, such as Canada, Belgium, Switzerland and Italy, but less so for countries where ethnic intermarriage predominantly occurs between natives and immigrants, or their children.

Another limitation of our study context is that, in the Finnish population register, a person can be registered with only one mother tongue. This registration procedure serves the needs of the authorities well, as Finland is an officially bilingual country. From a research perspective, however, it means that any individual variation on this account must be observed across time, coupled individuals or generations. The approach used here does consequently not reflect that



individuals may be capable, and speak, one language with the partner, but the other language with friends, at work, during hobbies or at other occasions. When doing so, the couple may have reached a stable and negotiated equilibrium, which we cannot observe. We have only assessed the language primarily used by a person, not if he or she frequently speak both languages. Thus, what we have observed may plausibly be the tip of the iceberg. More nuanced information about the discordance of language use and ethnicity would presumably result in even stronger evidence for the mechanisms at play. However, this cannot be done with Finnish register data, unless the official registration procedure changes.

During the past decades, mixed Finnish-Swedish unions amount to an increasing share of all unions with children who have some Swedish heritage. It can safely be claimed also that bilingualism has increased, even though no official statistics exist. Analyses of ethnic registration across more recent generations provide the most fruitful avenue for future register-based research on natives' intermarriage and divorce in Finland.

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Table 1. Number of couples by wife's and husband's main language in 1975 versus ethnicity in 1980

Ethnicity 1980	Main language 1975			
	SS	SF	FS	FF
SS	45,098	229	408	209
SF	270	7,321	7	2,195
FS	865	8	11,083	2,193
FF	76	627	530	761,873

First letter is for the wife and second letter is for the husband. S is for Swedish and F is for Finnish. The data consist of the total population of couples who were married in both 1975 and 1980.

Table 2. Number of couples, couple events, couple years, and divorce rate for the eight key categories (1975\_1980) and for all compositions of couples

	Number of couples	Number of divorces	Number of deaths	Number of couple years	Divorce rate
SS_SS	45,098	2,101	32,590	948,468	2.2
FF_FF	761,873	74,861	484,430	16,798,980	4.5
SF_SF	7,321	965	4,141	167,041	5.8
FS_FS	11,083	1,319	6,662	246,248	5.4
SS_SF	270	17	183	5,709	3.0
SS_FS	865	54	633	17,748	3.0
FF_SF	2,195	235	1,479	44,507	5.3
FF_FS	2,193	235	1,520	44,226	5.3
All	832,992	80,002	533,054	18,314,695	4.4

Number of deaths includes moves abroad, but the latter account for less than two per cent of all these events.

Divorce rate is the number of divorces times 1,000, divided by the number of couple years.

Table 3. Variable distributions (% of couples) for the eight key compositions (1975\_1980) and for all compositions of couples

	SS_SS	FF_FF	SF_SF	FS_FS	SS_SF	SS_FS	FF_SF	FF_FS	All
Marriage duration in 1980, 5-7 years	5.2	8.9	12.7	12.3	3.7	1.6	3.6	5.7	8.7
8-10 years	7.0	10.1	13.7	13.4	5.2	5.3	7.4	7.0	10.0
11-15 years	12.8	16.1	19.4	18.5	18.1	19.2	19.7	18.2	16.0
16-20 years	11.6	13.8	13.7	13.3	13.7	14.0	13.7	13.0	13.6
21-25 years	11.9	12.3	11.1	10.6	14.8	14.0	13.4	13.6	12.2
26-30 years	12.3	11.4	9.2	10.3	10.4	11.8	11.4	13.4	11.4
31-35 years	14.5	12.4	8.0	10.0	13.0	12.4	11.9	12.6	12.4
36-40 years	10.3	6.5	5.8	5.7	8.5	8.9	7.8	8.2	6.7
41+ years	14.4	8.5	6.4	6.0	12.6	12.8	11.1	8.3	8.8
Mean age at marriage, <21 years	11.2	17.8	15.5	12.2	18.5	12.7	17.7	16.8	17.3
22-23 years	22.1	25.1	22.4	20.5	22.6	22.9	24.4	20.8	24.8
24-25 years	24.1	21.3	22.6	21.4	21.1	21.5	20.9	18.8	21.4
26-29 years	25.9	21.1	23.3	24.8	21.5	24.9	20.5	21.8	21.4
30+ years	16.6	14.8	16.2	21.1	16.3	18.0	16.4	21.8	15.0
Age difference (husband-wife), <0 years	18.3	20.6	20.5	23.4	20.0	18.7	19.0	27.8	20.6
0-1 years	22.6	22.6	23.5	23.6	30.0	21.4	23.7	21.9	22.6
2-4 years	31.7	31.4	33.1	29.2	27.8	31.8	32.8	28.0	31.4
5+ years	27.4	25.3	22.8	23.8	22.2	28.1	24.4	22.3	25.4
Number of children and Age of youngest, No child	40.1	28.6	28.6	31.1	34.4	39.4	37.5	38.5	29.3
1 child, 0-6 years	2.8	4.8	6.8	6.5	2.2	1.3	2.5	3.3	4.7
1 child, 7-12 years	3.2	4.8	5.2	5.6	4.8	3.0	4.8	5.7	4.7
1 child, 13-17 years	4.6	5.0	5.0	5.0	3.7	5.4	5.2	5.1	5.0
1 child, 18+ years	12.4	11.0	8.2	9.0	13.3	11.4	10.7	11.4	11.0
2 children, youngest 0-6 years	8.9	11.9	15.8	14.5	7.0	7.9	7.2	8.1	11.7
2 children, youngest 7-12 years	7.5	8.0	9.7	8.7	11.5	8.7	9.9	7.6	8.0
2 children, youngest 13-17 years	6.1	6.7	5.9	5.9	6.3	8.0	6.6	7.0	6.6
2 children, youngest 18+ years	3.5	4.0	2.7	2.4	3.0	3.8	4.3	3.8	4.0
3 children, youngest 0-6 years	4.7	5.9	6.4	6.0	5.2	3.5	4.9	3.8	5.8
3 children, youngest 7-12 years	3.5	4.5	3.0	2.8	4.8	5.2	4.0	2.5	4.4
3 children, youngest 13-17 years	2.3	3.8	2.1	1.9	3.0	2.2	2.0	2.6	3.7
3 children, youngest 18+ years	0.6	1.1	0.4	0.5	0.7	0.2	0.5	0.5	1.0
Wife's and husband's education, Primary, Primary	49.8	50.5	37.7	39.0	53.0	54.1	46.9	53.3	50.2
Primary, Secondary+	17.0	15.7	20.1	20.3	16.3	19.5	24.1	18.1	15.9
Secondary+, Primary	10.8	12.6	12.4	11.8	14.4	8.2	9.7	11.5	12.5
Secondary+, Secondary+	22.5	21.2	29.8	28.9	16.3	18.2	19.2	17.1	21.4
Housing tenure, Own the accommodation	81.2	79.2	72.8	73.7	74.8	79.9	72.8	69.2	79.1
Do not own the accommodation	18.8	20.8	27.2	26.3	25.2	20.1	27.2	30.8	20.9
Previously married, None	98.6	97.0	94.1	93.8	97.0	97.9	95.7	92.6	97.0
One or both remarried	1.4	3.0	5.9	6.2	3.0	2.1	4.3	7.4	3.0
Wife's and husband's congregation, Both Lutheran	76.0	73.4	73.1	75.2	71.9	74.7	67.0	68.4	73.5
Both other category (including no congregation)	4.9	4.7	4.5	4.1	4.8	3.6	5.9	6.7	4.7
Different categories	19.1	21.8	22.4	20.7	23.3	21.7	27.1	24.9	21.7
Proportion Swedish in municipality, <0.0039	0.3	60.5	5.7	4.0	2.6	1.0	13.6	9.2	55.5
0.004-0.0149	0.8	17.3	6.4	5.3	3.0	1.7	13.2	10.8	16.1
0.015-0.0999	14.4	16.4	38.6	35.5	25.9	24.5	46.2	52.3	17.0
0.100-0.2999	14.9	4.3	21.4	24.3	18.9	20.5	15.8	18.4	5.4
0.300-0.4999	12.3	0.8	10.8	9.9	14.4	11.3	5.1	4.0	1.7
0.500-0.7499	16.9	0.5	10.4	11.2	17.4	17.8	4.2	3.8	1.7
0.750-	40.3	0.2	6.8	9.8	17.8	23.1	1.9	1.5	2.6
Changed ethnolinguistic environment, None	45.4	42.5	17.6	15.2	23.3	15.3	17.1	16.5	41.9
Wife had changed	17.5	16.4	16.6	34.6	14.1	43.0	21.5	27.3	16.7
Husband had changed	12.7	14.0	27.7	11.7	32.6	9.8	22.2	17.1	14.1
Both had changed	24.4	27.1	38.2	38.6	30.0	31.9	39.3	39.1	27.3

Table 4. Hazard ratios for divorce by couples' composition in 1975 versus 1980 according to models that adjust for additional variables

CONTROL VARIABLES	Eth. 1980	Main language 1975			
		SS	SF	FS	FF
None	SS	1	1.65*	2.16*	1.06
	SF	1.36	2.68*	0.04	2.39*
	FS	1.36*	3.11	2.46*	2.37*
	FF	3.09*	2.53*	2.93*	2.04*
Marriage duration in 1980	SS	1	1.14	1.53*	1.37
	SF	1.33	1.87*	0.00	2.24*
	FS	1.39*	2.44	1.75*	2.20*
	FF	4.27*	1.83*	2.10*	1.66*
+ Mean age at marriage and Age difference	SS	1	1.13	1.54*	1.45
	SF	1.33*	1.85*	0.00	2.16*
	FS	1.41*	2.87	1.83*	2.19*
	FF	4.06*	1.77*	2.07*	1.57*
+ Number of children and Age of youngest child	SS	1	1.13	1.54*	1.44
	SF	1.32	1.85*	0.00	2.14*
	FS	1.40*	2.71	1.82*	2.16*
	FF	4.02*	1.75*	2.07*	1.56*
+ Wife's and husband's education	SS	1	1.13	1.54*	1.44
	SF	1.33	1.85*	0.00	2.14*
	FS	1.40*	2.73	1.82*	2.17*
	FF	4.05*	1.75*	2.07*	1.56*
+ Housing tenure	SS	1	1.12	1.50*	1.36
	SF	1.32	1.81*	0.00	2.09*
	FS	1.39*	2.95	1.79*	2.09*
	FF	3.83*	1.71*	2.05*	1.55*
+ Previously married	SS	1	1.07	1.46*	1.30
	SF	1.27	1.75*	0.00	2.03*
	FS	1.38*	2.75	1.74*	1.99*
	FF	3.69*	1.63*	2.00*	1.53*
+ Wife's and husband's congregation	SS	1	1.07	1.43*	1.26
	SF	1.27	1.71*	0.00	1.99*
	FS	1.37*	2.82	1.72*	1.95*
	FF	3.59*	1.59*	1.94*	1.50*
+ Proportion Swedish in municipality of residence	SS	1	0.97	1.30	1.10
	SF	1.16	1.48*	0.00	1.68*
	FS	1.28	2.69	1.49*	1.63*
	FF	3.01*	1.35*	1.64*	1.39*
+ Changed ethnolinguistic environment	SS	1	0.97	1.28	1.10
	SF	1.14	1.45*	0.00	1.64*
	FS	1.25	2.57	1.46*	1.59*
	FF	2.94*	1.32*	1.62*	1.35*
All variables, but different reference category	SS	0.68*	0.66	0.88	0.75
	SF	0.78	0.99	0.00	1.12
	FS	0.86	1.76	1	1.09
	FF	2.02*	0.90	1.11	0.93*
All variables, but fewer exogamous categories	SS	0.69*	0.80	0.75	
	SF or FS	0.84	1	1.11*	
	FF	2.02*	1.00	0.93*	

\* Statistically significant at the 5% level.

Table 5. Hazard ratios for divorce in the fully adjusted model, estimates for the control variables with 95% confidence intervals

	HR (95% C.I.)
Marriage duration in 1980, 5-7 years	1
8-10 years	0.80 (0.79-0.82)
11-15 years	0.59 (0.58-0.61)
16-20 years	0.39 (0.38-0.40)
21-25 years	0.23 (0.22-0.24)
26-30 years	0.13 (0.12-0.14)
31-35 years	0.07 (0.07-0.08)
36-40 years	0.05 (0.04-0.05)
41+ years	0.02 (0.01-0.02)
Mean age at marriage, <21 years	1
22-23 years	0.74 (0.73-0.75)
24-25 years	0.57 (0.56-0.58)
26-29 years	0.43 (0.42-0.44)
30+ years	0.24 (0.24-0.25)
Age difference (husband-wife), <0 years	1
0-1 years	0.87 (0.85-0.89)
2-4 years	0.88 (0.86-0.90)
5+ years	0.99 (0.97-1.01)
Number of children and Age of youngest child, No child	1
1 child, 0-6 years	1.06 (1.02-1.09)
1 child, 7-12 years	1.17 (1.13-1.21)
1 child, 13-17 years	1.08 (1.04-1.13)
1 child, 18+ years	0.91 (0.87-0.96)
2 children, youngest 0-6 years	0.99 (0.96-1.02)
2 children, youngest 7-12 years	1.13 (1.09-1.16)
2 children, youngest 13-17 years	1.13 (1.09-1.18)
2 children, youngest 18+ years	0.97 (0.91-1.04)
3 children, youngest 0-6 years	1.00 (0.96-1.03)
3 children, youngest 7-12 years	1.18 (1.13-1.23)
3 children, youngest 13-17 years	1.22 (1.16-1.29)
3 children, youngest 18+ years	1.01 (0.88-1.16)
Wife's and husband's education, Primary, Primary	1
Primary, Secondary+	1.05 (1.03-1.07)
Secondary+, Primary	1.06 (1.03-1.08)
Secondary+, Secondary+	1.06 (1.04-1.08)
Housing tenure, Own the accommodation	1
Do not own the accommodation	1.32 (1.30-1.34)
Previously married, None	1
One or both remarried	2.05 (1.98-2.12)
Wife's and husband's congregation, Both Lutheran	1
Both other category (including no congregation)	1.14 (1.09-1.18)
Different categories	1.31 (1.28-1.34)
Proportion Swedish in municipality of residence, <0.0039	1
0.004-0.0149	1.06 (1.04-1.08)
0.015-0.0999	1.23 (1.21-1.26)
0.100-0.2999	1.13 (1.10-1.17)
0.300-0.4999	1.18 (1.12-1.25)
0.500-0.7499	0.93 (0.87-0.99)
0.750-	0.77 (0.71-0.83)
Changed ethnolinguistic environment, None	1
Wife had changed	1.12 (1.09-1.14)
Husband had changed	1.13 (1.10-1.15)
Both had changed	1.11 (1.09-1.14)



## ONLINE SUPPLEMENTARY MATERIAL

Table S1. Number of couples by wives' and husband's main language in 1975 versus ethnicity in 1980, with alternative set up of data

Ethnicity 1980	Main language 1975			
	SS	SF	FS	FF
SS	46,783	246	434	231
SF	291	7,933	9	2,388
FS	915	9	11,901	2,387
FF	84	664	587	809,582

First letter is for the wife and second letter is for the husband. S is for Swedish and F is for Finnish. The data consist of the total population of couples who were married in 1975, and both the woman and the man could be observed in 1980, but irrespective of their marital status.

Table S2. Number of couples, couple events, couple years, and divorce rate for the eight key compositions (1975\_1980) and for all compositions of couples, with alternative set up of data (see Table S1)

	Number of couples	Number of divorces	Number of deaths	Number of couple years	Divorce rate
SS_SS	46,783	2,879	33,280	1,199,680	2.4
FF_FF	809,582	104,728	497,205	21,233,200	4.9
SF_SF	7,933	1,359	4,275	212,069	6.4
FS_FS	11,901	1,836	6,875	312,302	5.9
SS_SF	291	29	191	7,331	4.0
SS_FS	915	84	649	22,704	3.7
FF_SF	2,388	361	1,529	57,834	6.2
FF_FS	2,387	358	1,576	57,636	6.2
All	884,444	111,944	547,052	23,157,138	4.8

Number of deaths includes migration abroad, but the moves account for less than two per cent of all these events.

Divorce rate is the number of divorces times 1,000, divided by the number of couple years.

Table S3. Variable distributions (% of couples) for the eight key compositions (1975\_1980) and all compositions of couples, with alternative set up of data (see Table S1)

	SS_SS	FF_FF	SF_SF	FS_FS	SS_SF	SS_FS	FF_SF	FF_FS	All
Marriage duration in 1975, <3 years	5.3	9.3	13.3	12.8	3.8	1.5	3.9	6.0	9.1
3-4 years	4.5	6.9	9.8	9.2	4.1	2.0	3.7	4.1	6.8
5-7 years	8.0	10.5	12.6	12.7	12.4	11.6	12.1	11.6	10.4
8-10 years	7.7	9.5	11.5	10.6	9.6	12.1	12.4	10.5	9.5
11-15 years	11.8	13.8	13.6	13.5	13.1	14.1	13.9	13.4	13.7
16-20 years	11.9	12.2	11.0	10.5	14.8	14.0	13.6	13.7	12.1
21-25 years	12.1	11.2	8.9	10.0	10.7	11.5	11.3	13.2	11.2
26-30 years	14.3	12.0	7.6	9.6	12.0	12.0	11.4	12.0	12.0
31-35 years	10.1	6.3	5.5	5.4	7.9	8.6	7.3	7.6	6.5
36-40 years	7.5	4.5	3.4	3.5	5.5	6.9	6.2	4.3	4.6
41+ years	6.8	3.8	2.7	2.3	6.2	5.7	4.3	3.6	4.0
Mean age at marriage, <21 years	11.4	18.4	15.7	12.7	19.6	13.7	18.5	17.2	17.9
22-23 years	22.2	25.2	22.4	20.7	22.3	22.4	24.5	20.6	24.9
24-25 years	24.1	21.0	22.8	21.5	21.6	21.5	20.8	18.8	21.2
26-29 years	25.8	20.7	23.3	24.5	21.0	24.3	20.2	21.5	21.1
30+ years	16.6	14.6	15.8	20.6	15.5	18.1	16.1	21.8	14.9
Age difference (husband-wife), <0 years	18.3	20.7	20.8	23.5	20.6	18.8	19.0	28.0	20.6
0-1 years	22.6	22.7	23.6	23.6	30.9	21.6	23.4	21.7	22.7
2-4 years	31.8	31.4	32.8	29.3	26.8	31.7	33.2	28.1	31.4
5+ years	27.3	25.1	22.8	23.6	21.6	27.9	24.5	22.2	25.2
Number of children and Age of youngest, No child	31.4	24.6	27.8	28.9	26.8	30.1	29.1	30.4	25.1
1 child, 0-6 years	8.2	12.4	16.3	15.5	8.9	6.9	8.6	10.1	12.2
1 child, 7-12 years	3.7	4.8	5.0	5.2	3.4	4.6	5.5	5.6	4.7
1 child, 13-17 years	4.0	3.8	3.2	3.7	4.1	4.4	3.6	3.9	3.8
1 child, 18+ years	11.8	8.2	6.5	7.7	9.3	10.2	9.3	9.6	8.4
2 children, youngest 0-6 years	10.6	11.8	15.3	13.4	14.4	11.0	12.5	10.6	11.8
2 children, youngest 7-12 years	7.6	8.0	8.0	8.1	9.3	10.7	9.1	8.6	8.0
2 children, youngest 13-17 years	5.1	4.9	4.2	3.9	4.8	3.9	5.9	5.2	4.9
2 children, youngest 18+ years	4.0	3.2	2.3	2.2	3.4	3.4	3.4	3.6	3.2
3 children, youngest 0-6 years	5.4	6.6	5.1	4.9	5.5	6.1	5.7	3.8	6.5
3 children, youngest 7-12 years	5.3	7.5	4.5	4.2	7.2	5.2	4.4	5.3	7.3
3 children, youngest 13-17 years	2.2	3.2	1.3	1.6	2.4	2.2	2.3	2.5	3.1
3 children, youngest 18+ years	0.8	1.0	0.4	0.6	0.3	1.3	0.5	0.7	0.9
Wife's and husband's education, Primary, Primary	50.1	51.7	38.4	39.5	52.9	54.2	47.7	53.6	51.3
Primary, Secondary+	17.1	16.0	19.9	20.6	16.8	19.7	24.0	18.3	16.2
Secondary+, Primary	10.6	12.3	12.8	11.7	14.8	8.1	9.7	11.6	12.1
Secondary+, Secondary+	22.3	20.0	28.9	28.1	15.5	18.0	18.6	16.5	20.3
Housing tenure, Own the accommodation	72.8	67.2	58.6	60.3	64.6	70.6	63.0	58.4	67.3
Do not own the accommodation	27.2	32.8	41.4	39.7	35.4	29.4	37.0	41.6	32.7
Previously married, None	98.5	96.8	93.7	93.5	97.3	97.8	95.2	91.8	96.8
One or both remarried	1.5	3.2	6.3	6.5	2.7	2.2	4.8	8.2	3.2
Wife's and husband's congregation, Both Lutheran	75.7	73.1	73.3	75.1	70.4	74.5	67.0	68.5	73.3
Both other category (including no congregation)	5.0	4.8	4.4	4.1	4.8	3.5	5.8	6.6	4.8
Different categories	19.3	22.0	22.3	20.8	24.7	22.0	27.2	24.9	21.9
Proportion Swedish in municipality, <0.0039	0.4	59.8	5.9	3.9	2.4	1.2	13.9	9.3	54.9
0.004-0.0149	0.8	16.4	5.7	4.8	3.4	2.4	11.5	10.4	15.3
0.015-0.0999	15.8	18.1	40.7	38.8	27.8	26.2	48.7	53.7	18.7
0.100-0.2999	6.1	3.0	12.2	13.2	11.3	9.8	10.9	14.0	3.5
0.300-0.4999	18.2	1.9	17.5	17.5	17.2	18.9	9.3	7.8	3.2
0.500-0.7499	17.8	0.6	11.3	12.4	18.2	17.4	3.9	3.5	1.8
0.750-	40.9	0.2	6.7	9.4	19.6	24.0	1.8	1.3	2.6
Changed ethnolinguistic environment, None	44.0	42.1	17.7	15.3	22.0	15.1	17.6	16.5	41.4
Wife had changed	17.7	16.3	16.6	34.1	14.4	43.7	21.8	27.2	16.7
Husband had changed	12.9	14.1	27.4	12.3	33.0	10.4	20.9	17.0	14.2
Both had changed	25.4	27.5	38.2	38.3	30.6	30.8	39.6	39.3	27.7

Table S4. Hazard ratios for divorce by couples' composition in 1975 versus 1980 according to models that adjust for additional variables, with alternative set up of data (see Table S1)

CONTROL VARIABLES		Main language 1975				
		SS	SF	FS	FF	
None	Eth. 1980					
	SS	1	2.14*	2.01*	1.45	
	SF	1.66*	2.74*	2.25	2.59*	
	FS	1.53*	4.41*	2.49*	2.56*	
Marriage duration in 1975	SS	1	1.49*	1.47*	1.77*	
	SF	1.57*	1.92*	1.45	2.40*	
	FS	1.54*	3.44	1.78*	2.31*	
	FF	3.99*	1.73*	2.17*	1.70*	
+ Mean age at marriage and Age difference	SS	1	1.46*	1.46*	1.87*	
	SF	1.53*	1.89*	1.76	2.31*	
	FS	1.56*	3.70	1.84*	2.29*	
	FF	3.80*	1.67*	2.11*	1.59*	
+ Number of children and Age of youngest child	SS	1	1.46*	1.46*	1.86*	
	SF	1.52*	1.89*	1.77	2.29*	
	FS	1.56*	3.66	1.84*	2.27*	
	FF	3.79*	1.66*	2.10*	1.58*	
+ Wife's and husband's education	SS	1	1.45*	1.46*	1.86*	
	SF	1.52*	1.88*	1.78	2.27*	
	FS	1.55*	3.60	1.83*	2.25*	
	FF	3.81*	1.64*	2.09*	1.58*	
+ Housing tenure	SS	1	1.40	1.43*	1.78*	
	SF	1.47*	1.83*	1.63	2.23*	
	FS	1.53*	4.01*	1.81*	2.17*	
	FF	3.76*	1.59*	2.02*	1.56*	
+ Previously married	SS	1	1.34	1.39*	1.68*	
	SF	1.44	1.77*	1.29	2.15*	
	FS	1.53*	3.79	1.75*	2.03*	
	FF	3.66*	1.51*	1.98*	1.54*	
+ Wife's and husband's congregation	SS	1	1.34	1.35*	1.63*	
	SF	1.42	1.71*	1.34	2.08*	
	FS	1.51*	3.87	1.71*	1.98*	
	FF	3.49*	1.46*	1.89*	1.50*	
+ Proportion Swedish in municipality of residence	SS	1	1.19	1.20	1.34	
	SF	1.28	1.43*	1.04	1.66*	
	FS	1.38*	3.52	1.43*	1.55*	
	FF	2.82*	1.20	1.52*	1.33*	
+ Changed ethnolinguistic environment	SS	1	1.19	1.18	1.34	
	SF	1.25	1.40*	1.06	1.62*	
	FS	1.35*	3.36	1.41*	1.52*	
	FF	2.76*	1.17	1.50*	1.30*	
All variables, but different reference category	SS	0.71*	0.84	0.84	0.95	
	SF	0.89	0.99	0.75	1.15*	
	FS	0.96	2.39	1	1.08	
	FF	1.96*	0.83	1.06	0.93*	
All variables, but fewer exogamous categories	SS	0.71*	SF or FS	0.84	FF	0.95
	SF or FS	0.94	1			1.12*
	FF	1.96*	0.94			0.93*

\* Statistically significant at the 5% level.

Table S5. Hazard ratios for divorce in the fully adjusted model, estimates for the control variables with 95% confidence intervals, with alternative set up of data (see Table S1)

	HR (95% C.I.)
Marriage duration in 1975, <3 years	1
3-4 years	0.85 (0.83-0.87)
5-7 years	0.73 (0.72-0.75)
8-10 years	0.59 (0.58-0.61)
11-15 years	0.43 (0.42-0.44)
16-20 years	0.27 (0.26-0.28)
21-25 years	0.17 (0.16-0.17)
26-30 years	0.10 (0.10-0.11)
31-35 years	0.06 (0.06-0.07)
36-40 years	0.04 (0.03-0.04)
41+ years	0.01 (0.01-0.02)
Mean age at marriage, <21 years	1
22-23 years	0.72 (0.71-0.73)
24-25 years	0.55 (0.54-0.56)
26-29 years	0.42 (0.41-0.43)
30+ years	0.26 (0.25-0.27)
Age difference (husband-wife), <0 years	1
0-1 years	0.86 (0.85-0.88)
2-4 years	0.87 (0.86-0.89)
5+ years	1.00 (0.98-1.02)
Number of children and Age of youngest child, No child	1
1 child, 0-6 years	0.97 (0.95-0.99)
1 child, 7-12 years	1.07 (1.04-1.10)
1 child, 13-17 years	1.03 (0.99-1.08)
1 child, 18+ years	0.96 (0.91-1.01)
2 children, youngest 0-6 years	0.97 (0.95-0.99)
2 children, youngest 7-12 years	1.10 (1.07-1.13)
2 children, youngest 13-17 years	1.12 (1.07-1.17)
2 children, youngest 18+ years	0.98 (0.91-1.05)
3 children, youngest 0-6 years	1.02 (1.00-1.05)
3 children, youngest 7-12 years	1.25 (1.21-1.29)
3 children, youngest 13-17 years	1.23 (1.16-1.30)
3 children, youngest 18+ years	0.90 (0.79-1.03)
Wife's and husband's education, Primary, Primary	1
Primary, Secondary+	1.02 (1.00-1.03)
Secondary+, Primary	0.98 (0.97-1.00)
Secondary+, Secondary+	0.95 (0.93-0.96)
Housing tenure, Own the accommodation	1
Do not own the accommodation	1.32 (1.30-1.33)
Previously married, None	1
One or both remarried	2.05 (2.00-2.11)
Wife's and husband's congregation, Both Lutheran	1
Both other category (including no congregation)	1.15 (1.12-1.19)
Different categories	1.41 (1.38-1.43)
Proportion Swedish in municipality of residence, <0.0039	1
0.004-0.0149	1.11 (1.09-1.13)
0.015-0.0999	1.34 (1.31-1.36)
0.100-0.2999	1.26 (1.23-1.30)
0.300-0.4999	1.04 (1.00-1.07)
0.500-0.7499	0.92 (0.87-0.97)
0.750-	0.75 (0.71-0.80)
Changed ethnolinguistic environment, None	1
Wife had changed	1.12 (1.10-1.14)
Husband had changed	1.15 (1.13-1.17)
Both had changed	1.12 (1.10-1.13)