

Are Mixed-Ethnic Unions More Likely to Dissolve Than Co-Ethnic Unions? New Evidence from Britain

Les unions mixtes sont-elles plus fragiles que les unions entre partenaires de même origine ethnique? Nouveaux résultats pour la Grande-Bretagne

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Abstract The increasing proportion of ethnic minorities in Britain has been paralleled by an increase in the occurrence of mixed-ethnic marriages between one White partner and an ethnic minority partner. Such marriages are thought to be at higher risk of divorce, but empirical studies so far have been inconclusive. This paper uses the Office for National Statistics longitudinal study for England and Wales to investigate whether mixed-ethnic unions are more likely to end in divorce than co-ethnic unions. We followed married couples in 1991–2001 and examined their risks of divorce. We found evidence that mixed-ethnic unions have a higher risk of dissolution than co-ethnic unions. However, after controlling for partners' characteristics, most importantly the younger ages of people in mixed-ethnic unions, the risk of divorce for mixed-ethnic unions was no longer elevated, but lay close to the higher risk found for the two constituent co-ethnic unions.

Keywords Mixed-ethnic unions · Longitudinal study · Divorce · Convergence theory · Heterogamy effect

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Résumé Alors que la présence des minorités ethniques en Grande-Bretagne augmente, on observe un accroissement des mariages mixtes entre un(e) partenaire blanc(he) et un(e) partenaire d'une minorité ethnique. Ces mariages sont réputés plus fragiles, mais les études empiriques menées jusqu'à présent ne sont pas concluantes. A partir des données de l'enquête longitudinale de l'Office national de statistiques pour l'Angleterre et le Pays de Galles, cet article examine si les unions mixtes présentent un risque de divorce plus important que les unions entre partenaires de même origine ethnique. Des couples mariés en 1991 sont suivis jusqu'en 2001 afin d'étudier les risques de divorce. On constate que les unions mixtes présentent des risques de rupture plus élevés que les unions entre partenaires de même origine ethnique. Cependant, une fois contrôlées les autres caractéristiques des partenaires, et plus particulièrement les âges plus jeunes des personnes en union mixte, les risques de divorce pour les unions mixtes ne paraissent plus si élevés et se rapprochent du risque le plus élevé observé pour les deux types d'union entre partenaires de même origine ethnique étudiés dans cet article.

Mots-clés Unions mixtes · Étude longitudinale · Divorce · Théorie de la convergence · Effet de l'hétérogamie

1 Introduction

The rise in the proportion of ethnic minorities is one of the most marked demographic changes in Western countries in the last few decades (Coleman 2009). In England, for example, the percentage of ethnic minorities increased from 4.6 % to 8.6 % between 1981 and 2001 (Rees and Butt 2004). This change has led to concerns about the socio-economic, cultural, and spatial integration of minority groups and some minority groups are more geographically segregated from mainstream society than others (Finney and Simpson 2003; Rees and Butt 2004). Mixed-ethnic unions, particularly between Whites and non-Whites, are generally regarded as an important indicator of minority integration in their host societies. The growth of mixed-ethnic partnerships illustrates increasing mutual acceptance of ethnic groups; indeed, it can be argued that mixed partnerships represent the ultimate in social acceptability and assimilation (Bratter and King 2008; Schoen and Cohen 1980; Tolsma et al. 2008; van Ham and Tammaru 2011). It is therefore a positive sign that there has been a considerable rise in mixed-ethnic unions, both in their absolute numbers and their proportion of all unions in Britain, over the last few decades (Berrington 1996; Coleman 2004; Feng et al. 2010; Muttarak 2004). However, this increase in mixed-ethnic unions has been the subject of negative comments from the public, politicians, the press and academics and they have not always been celebrated. Instead, mixed-ethnic unions have frequently been seen as a social problem, which lead to difficulties for the partners, their children and the people around them (Benson 1981).

Recent years have seen an increase in research on the basic patterns and trends in the growth of mixed-ethnic unions in Britain (e.g. Ballard 1997; Berrington 1996;

Coleman 1985; 2004; Data Management and Analysis Group Update 2005; Holdsworth and Dale 1997; Johnston et al. 2006; Model and Fisher 2002; Muttarak 2003; 2004). However, none of the studies focuses specifically on the dissolution of mixed-ethnic unions. There has been a significant rise in the rates of union dissolution in western countries in the post-war period; in Britain the crude divorce rate increased more than sixfold from 2 per 1,000 in 1960 to about 13 per 1,000 marriages in 2000 (Chan and Halpin 2003). This trend has largely been attributed to the increase in the economic independence of women, changes in public attitudes towards divorce, and the liberalisation of marriage legislation (Becker 1981; Kiernan and Mueller 1999; Thornton 1989; Trent and South 1989). Certain factors, such as getting married at a young age and premarital birth, are positively associated with dissolution, while higher income couples and those with higher qualifications have a lower risk of divorce (Chan and Halpin 2003; Kiernan and Mueller 1999; Teachman 2002). Ethnicity is also associated with the risk of separation; studies from both the US and Britain finds that Black populations have higher risks of divorce than Whites, while Asians usually have lower risks (Berrington 1996; Fu 2006; Heaton and Albrecht 1991; Teachman 2002). However, studies on union dissolution have generally ignored the effects of ethnic mixing in households. The existing evidence is inconclusive with some studies suggesting an elevated risk of divorce for mixed-ethnic couples (Dribe and Lundh, 2011; Kalmijn et al. 2005) and others finding no such evidence (Cunningham 1990; Jones 1996; Zhang and van Hook 2009).

It might be expected that heterogamous partnerships would be more likely to dissolve than homogenous partnerships. Cultural characteristics relating to tastes, values, ambitions and communication styles vary across ethnic groups (Kalmijn et al. 2005). Other factors include societal attitudes and the (perceived) support that partners in mixed-ethnic couples may or may not receive. Mixed couples may not receive as much support from their social networks as those who conform to more conventional partnership arrangements. We might imagine that these issues may have become less important over time, as couples from mixed-ethnic backgrounds become more common and accepted.

This is the first study to investigate the dissolution of mixed-ethnic couples using large-scale longitudinal data from the England and Wales Office for National Statistics Longitudinal Study (ONS-LS). Here, we define mixed-ethnic marriages as opposite-sex married couples that include a White person and a Black or an Asian partner. We compare the risk of dissolution for different types of mixed couples with that for co-ethnic couples. This study complements those that describe the pattern and formation of mixed-ethnic unions, and this aspect extends our understanding of the integration of minorities in Britain (Kalmijn 1998).

2 Theoretical Background

Two competing theories have guided research on the instability of mixed-ethnic unions (Jones 1996; Kalmijn 1998; Zhang and van Hook 2009). The first theory starts from the observation that homogamy is the norm while heterogamy is aberrant

(Kalmijn et al. 2005). It is well known that people tend to choose partners with similar age, religious, ethnic, educational, and family characteristics (Kalmijn 1991; Kalmijn 1998; Schoen and Weinick 1993). Individual preferences underpin such partner choices, and people choose partners with similar characteristics because they are more likely to have similar values, tastes, and behaviours, including views on issues such as gender roles, division of labour in the household and the upbringing of children.

The opportunity structure of suitable partners also plays an important role in partner choice. The chance of meeting someone with similar characteristics is generally higher than that of meeting someone with different characteristics as most people meet potential partners at school, at work, at a friend's home, or in the neighbourhood (Houston et al. 2005). Since residential areas and workplaces tend to be segregated by ethnicity it is more likely that people will socialize with those from groups similar to themselves (Ellis et al. 2004).

Partner choice is also influenced by the opinions of family members and members of one's social circle. The role played by parents or other family members in partner choice varies for different cultures. But, in most cultures, a homogamous relationship is more likely to meet with the approval of families, relatives, and friends as the partner is more likely to resemble them and may seem to fit more easily into their social networks.

The advantages that can be identified for homogamous unions might in turn translate into the disadvantages of heterogamous unions. Partners in mixed-ethnic couples are more likely to differ in values, life styles and norms, which may make it difficult for them to reach consensus in daily life decisions (Bumpass and Sweet 1972; Kalmijn et al. 2005). Such disagreements may induce stress and could be associated with the risk of divorce. If, in addition, the support from peers and family is less strong for those in mixed-ethnic couples, the risk of divorce may raise further. However, it can also be argued that mixed-ethnic couples have thought through all possible adverse aspects before forming a partnership and believe their love to be strong enough to overcome the disadvantages (Blau and Schwartz 1984). This would imply that mixed-ethnic unions do not have to be less stable than co-ethnic unions.

The alternative theory to the homogamy perspective is the ethnic convergence theory. This theory expects that the likelihood of divorce of a mixed-ethnic marriage falls between those of the two ethnic groups involved (Jones 1996). It is already well-known that divorce risks differ between ethnic groups and therefore we might expect the ethnic composition of the mixed-ethnic union to influence the stability of the partnership before we even consider the potential additional strains that might be related to living in a mixed union. Different ethnic groups have different cultures and traditions regarding marriage and divorce. Some groups have more "modern" values and be more tolerant to divorce, while others with more "traditional" values may be more opposed to divorce as a response to union disharmony, even in circumstances when the partnership quality is low (Berthoud 2000; Heaton and Albrecht 1991; Jones 1994). We might expect that the divorce behaviour of partners from different ethnic groups will be inherited from their individual backgrounds. For example, couples consisting of two partners from the White group have higher divorce rates than couples consisting of two partners from the Asian group

(Berthoud 2000). According to the ethnic convergence theory we expect that Asian–White marriages will be less likely to dissolve than White–White marriages but more likely to dissolve than Asian–Asian unions.

3 Empirical Studies

Most existing studies on the dissolution of mixed-ethnic marriages are descriptive and base their conclusions on the ratio of the number of divorces to marriages in the same or adjacent years. However, their findings are inconsistent. For example, Monahan (1970) used marriage registration data over a period of 30 years in Iowa and found that although Black–Black marriages displayed higher rates of divorce than White–White marriages, mixed marriages between Black husbands and White wives were more stable than those between White couples. Tribalat (1987) showed that in the Federal Republic of Germany only marriages between German women and Turkish or Yugoslav men displayed higher rates of divorce than other co-ethnic marriages and mixed-ethnic marriages. In California, Maneker and Rankin (1988) found that the divorce propensity was higher only in marriages between Black men and White women. Schwertfeger (1982) was the first to use panel data, following a 1968 cohort of first marriages among residents in Hawaii to 1976. Schwertfeger did not find clear patterns in divorce rates for mixed-ethnic couples apart from a high level of stability for Chinese co-ethnic unions. On the other hand, Heaton's (2002) US study of mixed marriages between Blacks and Whites reported that marital dissolution was more likely for mixed-ethnic couples. Kalmijn et al. (2005), using linked marriage and divorce registration data from 1974 to 1994 in the Netherlands, found a high risk of dissolution for couples including a Dutch person and someone from another nationality. Zhang and van Hook (2009) used six panels of the US Survey of Income and Program Participation to examine the likelihood of dissolution of interracial marriages and found no homogamy effect. Instead they found dissolution propensities of interethnic unions to fall between the propensities of the component ethnic groups. Dribe and Lundh (2011) recently explored the relationship between heterogamy and union dissolution using population register data in Sweden. They used event history models and found that mixed-ethnic unions exhibited higher risks than co-ethnic unions.

4 Data and Methods

The data used for our analyses are drawn from the ONS-LS, which is a nationally representative 1 % sample of the English and Welsh population including approximately 500,000 people. Anyone whose birthdate falls into one of the four selected dates is included in the study. The study links information from the 1971, 1981, 1991, and 2001 Censuses and the sample is updated through inter-censal births, deaths, immigrations, embarkations and re-entries. Information on the household members of ONS-LS members is also included, although the records for these individuals are not linked through time. In addition to census data, information

is linked from cancer and vital events registrations. For example, information on live and still births to sample mothers, infant deaths to sample mothers, and deaths of sample members' spouses is added to the data. Marriage and divorce registrations are not linked to sample members. Therefore, we did not have information on age at marriage or duration of the marriage (Hattersley and Creeser 1995).

We extracted 1991 and 2001 census data from the ONS-LS. The 1991 Census ethnic groups were aggregated into five broad categories to avoid groups with small numbers of mixed-ethnic unions (Table 1). The "Other" ethnic group is highly heterogeneous and we therefore excluded this group from our analysis, leaving four groups: White, Black, South Asian, and Other Asian. As couples from two minority groups are rare, our definition of a mixed-ethnic union therefore involved a White partner and a partner from one of our three ethnic minority groups.

We excluded cohabiting couples and thus our sample includes all male–female couples who were married in 1991 and where the sample member was also present in the 2001 Census. We also identified partners of LS members in 2001 to identify couples who divorced between 1991 and 2001 and those that stayed intact. In total there were 172,473 couples in our data, of whom 12 % divorced between 1991 and 2001. Mixed-ethnic unions involving a minority and a White individual accounted for 0.8 % of all married couples.

We extracted a range of individual-level explanatory variables from the 1991 census that would be expected to relate to divorce risk (Table 2). Age at marriage and duration of marriage are important predictors of union dissolution. As the LS does not have data on age at marriage we use the age at 1991 as a proxy for these two factors. We included educational qualifications in 1991 in two categories: with and without a degree. Economic activity in 1991 was also included in four categories: in employment, unemployed, retired, and economically inactive. In addition, we distinguished LS members who were born in the UK from those born outside the UK. It is important to include characteristics of both partners (Gaines et al. 2006), so we formed combined measures from both partners in couples for

Table 1 Ethnic definition in the 1991 census

	Ethnic group categories used in the analysis	Ethnic groups identified in the 1991 census
<i>Source</i> ONS-LS	White	White
	Black	Black-Caribbean
		Black-African
		Black other
		Black and White
	South Asian	Indian
		Pakistani
		Bangladeshi
	Other Asian	Chinese
		Other Asian
^a This group was dropped from the subsequent analysis due to its small size and heterogeneous membership	Other ^a	Other ethnic group: non-mixed origin
		Other ethnic group: mixed origin

Table 2 Characteristics at the 1991 Census for members of the 172,473 couples (%)

Variable	Category	Male partner	Female partner
Ethnicity	White	94.9	94.9
	Black	0.9	0.8
	South Asian	3.8	3.7
	Other Asian	0.4	0.5
Age	16-34	21.8	28.2
	35-49	40.2	40.4
	50+	38.0	31.4
Country of birth	In the UK	91.5	91.3
	Outside UK	8.5	8.7
Economic activity	Employed/self-employed	79.3	58.7
	Unemployed	5.4	2.1
	Retired	10.7	7.9
	Inactive	4.6	31.3
Education	No Degree	88.8	94.9
	Degree and Higher	11.2	5.1
Marital status	First marriage(both partners)	83.3	
	Later marriage (either partner)	16.7	
Housing tenure	Owned	85.5	
	Social	11.8	
	Rent	2.7	
Number of children in family	0	51.2	
	1	18.3	
	2	21.4	
	3 and above	9.0	
Presence of children under 5	No	79.8	
	Yes	20.2	
Geographical region	North East/Yorkshire & Humberside	15.2	
	North West/Wales	18.9	
	Midlands	19.4	
	South	36.3	
	London	10.2	

Source ONS-LS, authors' calculations

age, educational level, country of birth, and economic activity. The marital status of unions was defined using the marital status of both partners. We defined the couple as in a first marriage if both of them were in a first marriage, in a second or later marriage if either was re-married. For men in the sample, 95 % were White while South Asians, Blacks and Other Asians accounted for 3.8 %, 0.9 %, and 0.4 % respectively, and 8.5 % of men were born outside the U.K. The distribution of women by ethnic group was similar to that of men. Housing tenure for 1991 was included as the literature suggests that the risk of divorce is higher for renters as divorce is less costly than for homeowners. In addition people in social rented

housing have higher risks of divorce due to financial strains. Region of residence is another factor which may be associated with divorce and therefore was included as an explanatory variable.

To identify divorces, we started with all LS members living in married couples in 1991 and selected those who were single or had re-partnered by 2001 (different partners were identified based on their dates of birth). Couples where LS members became widowed during the follow-up period were dropped from the analysis (as a result, 15,325 couples were removed from the analysis). We explored the risks of divorce descriptively and we also modelled the probability of divorce using logistic regressions. The dependent variable was partnership status in 2001: couple intact (0), couple dissolved (1). The statistical software we used was STATA 9 (Stata Corp 2005). As the ONS LS is a quasi-random sample of the population in England and Wales, no weighting was needed in the analysis (Hattersley & Creeser, 1995).

5 Results

5.1 Patterns of Mixed-ethnic Marriages

Most men and women lived with a partner from their own ethnic group (Table 3). Other Asian women were the most likely to out-marry (35 %) and Black men were the second most likely to be in a mixed-ethnic marriage (23 %). Black women also had a high out-marrying rate (19 %), while both South Asian men (4 %) and women (2 %) had low rates of out-marrying with Whites. Other Asian men had exogamous marrying rates of 17 %. Black and South Asian men were more likely than Black and South Asian women to partner with a White person, while Other Asians women were more likely than men to have a White partner.

The out-marrying rates varied by the demographic and socio-economic characteristics of the minority group member of the couple. In general, out-marrying was more common for younger adults; the proportion in mixed-ethnic unions with White people in the youngest age group was generally close to double that for the oldest age group. The only exception was South Asian men, where there was no evidence of any age trend.

The percentage of out-marrying with Whites was much higher for ethnic minority men and women who were born in the UK compared to those who were born abroad. For all ethnic-gender groups, the rate of out-marrying for the UK born was roughly twice that for those born outside the UK. For all groups, except Black men, those with higher qualifications were considerably more likely to marry Whites than those with no degree; for South Asian men and women, those with degrees were around four times as likely as those without degrees to marry a White person, with around one in ten South Asians marrying a White person.

5.2 Analysing the Risk of Divorce

Table 4 gives the number of marriages in 1991 and the number and proportion divorced by 2001 by ethnic group. The overall average divorce rate of 12 % is

Table 3 Ethnic minority members of couples, total numbers and percentages living with a White partner, by gender and 1991 Census characteristics

Ethnicity	Age group				Marital status				Place of birth				Education							
	16-34		35-49		50+		First marriage		Later marriage		Not UK		UK		No degree		With degree			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
Males																				
Black	1505	23.1	361	34.1	532	24.4	612	15.4	1260	20.3	245	37.1	1252	17.5	253	50.6	1354	23.5	151	19.2
South Asian	6550	3.9	1893	3.5	2801	3.5	1856	5.0	6166	3.5	384	10.9	6261	3.9	289	5.5	5837	3.1	713	10.9
Other Asian	654	16.9	166	22.9	315	16.2	173	12.7	608	16.0	46	30.4	636	16.0	18	50.0	553	14.5	101	30.7
Females																				
Black	1420	18.5	681	27.3	554	20.4	358	6.7	1197	16.1	223	30.9	1103	12.9	317	37.8	1344	17.9	76	28.9
South Asian	6427	2.1	2872	3.2	2715	1.9	905	1.6	6052	1.7	375	8.8	5970	1.9	457	4.8	6194	1.8	233	10.7
Other Asian	839	35.3	353	43.6	388	33.8	119	23.5	729	29.9	110	70.9	821	34.6	18	66.7	782	34.1	57	50.9

Source ONS-LS, authors' calculations

Table 4 Number of spousal couples in 1991 and proportion of divorced by 2001

Union type	Number of couples	Number of divorced	% divorced
White–White	163,071	19,945	12.2
Black–Black	1,158	234	20.2
Black–White	609	146	23.9
South Asian–South Asian	6,292	693	11.0
South Asian–White	393	58	14.8
Other Asian–Other Asian	543	62	11.4
Other Asian–White	407	58	14.3
Total	172,473	21,196	12.3

dominated by that of White co-ethnic marriages, the largest population group. Marriages involving Black people had higher rates of divorce with the rate of divorce for Black co-ethnic couples and for Black-White couples being over 20 %. South Asian and Other Asian co-ethnic couples exhibited lower divorce rates than White–White couples. South Asian-White couples had higher rates of divorce than both White–White and South Asian-South Asian couples. The same pattern is evident for Other Asian-White couples who had higher rates of divorce than both White–White and Other Asian-Other Asian couples. From these descriptive figures it appears that mixed-ethnic unions do demonstrate higher risks of divorce than co-ethnic unions.

We fitted logistic regression models to examine the likelihood of divorce by couple type. Model 1 in Table 5 compares the risk of divorce by the ethnic composition of the couple, with no adjustment for other factors. Model 2 shows the risk of divorce controlling for a range of factors which may contribute to the risk of divorce. From Model 1, which is entirely based on information from Table 4, we can see that unions involving Black people had higher risks of divorce in comparison with the risk for White–White couples. Black-White couples had the highest odds ratio of divorce, more than twice the risk for White–White couples and higher than the risk of divorce for Black–Black couples. While the risk of divorce for South Asian co-ethnic marriages was lower than that for White–White couples, the risk of divorce for South Asian-White couples was no different from that for White–White couples. Marriages involving Other Asians showed similar risks of divorce to White co-ethnic unions. To assess the risks of divorce for mixed-ethnic unions, these risks need to be compared to the risks of divorce for co-ethnic couples of both the ethnic groups which constitute the mixed couple types. Therefore, apart from comparing the odds ratio of divorce for ethnic groups with that for the reference White co-ethnic couples, we also compared risks of divorce for mixed-ethnic unions with that for the constituent minority co-ethnic unions. We can see that Black-White mixed-ethnic unions had significantly higher divorce risks than Black–Black couples. We also see that South Asian-White couples had higher risks of divorce than South Asian co-ethnic couples. Other Asian mixed-ethnic unions did not have higher risks than Other Asian co-ethnic unions. Therefore, in a model where we did not control for any demographic and socio-economic factors, we

Table 5 Odds ratios of union dissolution between 1991 and 2001, results from logistic regression

Variable	Model 1		Model 2	
	Odds ratio	95% CI	Odds ratio	95% CI
Couple type				
White–White	1		1	
Black–Black	1.82***	(1.57–2.10)	1.54***	(1.30–1.84)
Black–White	2.26*** ^a	(1.88–2.73)	1.52***	(1.25–1.85)
South Asian–South Asian	0.89***	(0.82–0.96)	0.61***	(0.53–0.69)
South Asian–White	1.24 ^{aa}	(0.94–1.64)	0.94 ^{aaa}	(0.70–1.26)
Other Asian–Other Asian	0.92	(0.71–1.21)	0.67***	(0.50–0.90)
Other Asian–White	1.19	(0.90–1.58)	0.86	(0.65–1.15)
Age				
Both 16–34 years			1	
Both 35–49			0.37***	(0.35–0.38)
Both 50+			0.12***	(0.12–0.13)
Male 35–49, female 16–34			0.65***	(0.62–0.68)
Male 50+, female 16–34			0.67***	(0.53–0.85)
Male 50+, female 35–49			0.23***	(0.21–0.25)
Male 16–34, female 35–49			0.61***	(0.55–0.68)
Male 16–34, female 50+			1.59*	(0.96–2.62)
Male 35–49, female 50+			0.25***	(0.21–0.29)
Education				
Both no degree			1	
Male with no degree, female with degree			0.93	(0.84–1.04)
Both with degree			0.68***	(0.62–0.74)
Male with degree, female with no degree			0.72***	(0.68–0.77)
Employment				
Both employed			1	
Male employed, female unemployed			1.18***	(1.06–1.31)
Male employed, female inactive			0.88***	(0.85–0.92)
Male unemployed, female employed			1.46***	(1.33–1.61)
Both unemployed			1.63***	(1.39–1.93)
Male unemployed, female inactive			1.34***	(1.24–1.45)
Male inactive, female employed			1.08	(0.97–1.20)
Male inactive, female unemployed			1.80***	(1.22–2.66)
Both inactive			1.08***	(1.00–1.16)
Country of birth				
Both born in the UK			1	
Male in UK, female outside UK			1.15***	(1.06–1.25)
Both born outside UK			1.16**	(1.04–1.31)
Male born outside UK, female in UK			1.09**	(1.00–1.19)

Table 5 continued

Variable	Model 1		Model 2	
	Odds ratio	95% CI	Odds ratio	95% CI
Marital status				
First marriage			1	
Second marriage			1.72***	(1.65–1.78)
Number of children				
0			1	
1			1.17***	(1.12–1.23)
2			1.22***	(1.17–1.28)
3			1.34***	(1.26–1.42)
Children under 5				
No			1	
Yes			0.86***	(0.82–0.90)
Tenure				
Owned			1	
Social rent			1.32***	(1.27–1.38)
Private rent			1.47***	(1.36–1.59)
Region				
North East			1	
North West			0.95*	(0.90–1.00)
Midlands			1.00	(0.95–1.05)
South			1.05**	(1.01–1.10)
London			1.00	(0.94–1.06)

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (significantly different from White co-ethnic unions)

^a $p < 0.1$ ^{aa} $p < 0.05$, ^{aaa} $p < 0.01$ (significantly different from the constituent minority co-ethnic unions)

Source ONS-LS, authors' calculations

found a heterogamy effect (which posits that the risk of divorce for mixed-ethnic unions is higher than the risk of divorce for corresponding origin groups) only for mixed-ethnic marriages involving Blacks.

In Model 2 we included a range of control variables. We first discuss the effects of demographic and socio-economic characteristics on the likelihood of divorce. In comparison to couples with both in the youngest age group (16–34), older couples had a reduced risk of divorce, down by roughly 80 % for couples where both were in the oldest group (50+). Where couples fell in different age groups the rates were generally intermediate between those for both members at each individual age. The exception was men in the youngest age group married to women in the oldest who had the highest rate of divorce. In comparison with couples where neither partner held a degree, other types of couple were less likely to divorce, with couples where both partners held a degree being the least likely to end up in divorce by 2001. Compared with couples with both partners in employment, all other combinations appeared to raise the likelihood of divorce, apart from couples where the male partner was employed and female partner was economically inactive. Country of

birth was also found to be an important factor in understanding divorce. Couples where at least one of the partners was born outside the UK had elevated risks of divorce. In terms of marital status, those in second or later marriages had a higher risk of divorce than those in first marriages. Couples with children had higher divorce risks than couples without children, especially when there was more than one child in the family and when the children were older than 4. This is an unexpected result which is the opposite of what would be expected based on most existing literature (Svarer and Verner, 2008). However, Chan and Halpin (2003) found similar results using data from the British Household Panel Survey (BHPS). To test whether our estimates of risks of divorce on union types were robust to the inclusion or exclusion of the children variable, we investigated models without it. The odds ratios of divorce for union types remained largely unchanged (modelling results are available upon request). Thus, we have retained this variable in the model. However, we acknowledge that the effect of children on stability of marriage needs further research as couples with large families are a highly selected group (Svarer and Verner, 2008). Social renters and private renters had higher risks of divorce than homeowners. We also found regional variation in the risks of divorce: living in Southern England was associated with higher divorce risks compared with living in North East and Yorkshire and the Humberside.

Introduction of demographic and socio-economic variables into the regression had a considerable attenuation effect on the ethnic group parameters. Odds ratios of divorce for Black-White couples are now only 52 % higher than the risk of divorce for White-White couples. So more than half of the higher risk as found in model 1, can be explained by demographic and socio-economic characteristics of these couples. The attenuation effect is similar for mixed marriages between Whites and South Asians but to a lesser degree with about 30 % of the risk of divorce being attributed to demographic and socio-economic characteristics of couples. Attenuation is also seen for unions involving Other Asians. The odds ratio of divorce for Other Asian co-ethnic marriages was reduced by about 30 % and became significantly lower than the risk for White-White couples. In Model 2, mixed-ethnic unions involving Black people did not show elevated or reduced risks of divorce compared to Black-Black unions. Mixed-ethnic marriages involving White and South Asian people appeared to have higher risks of divorce than South Asian-South Asian couples. For Other Asian mixed-ethnic marriages the likelihood of divorce was not significantly different from that for Other Asian co-ethnic marriages.

In summary, much of the higher risks of divorce in mixed-ethnic marriages involving Blacks and South Asians can be explained by their different demographic and socio-economic characteristics, with the main factor being their younger age structure. For example, 41 % of Blacks in mixed-ethnic marriages were in the youngest 16–34 age group while the corresponding percentage for co-ethnic marriages was 27 %. To get more insight into the relative contribution of each control variable to the fit of the model we ran a series of regressions which included couple type and only one of the controls. This exercise showed that while economic activity, tenure, and education were all significant predictors of divorce risks, the age of couples, which included a combination of both male and female ages, had the largest effect on the reduction of odds ratios of couple types. These model results

Table 6 Odds ratios of union dissolution by ethnic-gender group between 1991 and 2001, results from logistic regression

Source ONS-LS, authors' calculations

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ (significantly different from White co-ethnic unions)

^a $p < 0.1$ ^{aa} $p < 0.05$, ^{aaa} $p < 0.01$ (significantly different from the constituent minority co-ethnic unions)

Variable	Odds ratio	95% CI
Union type		
White–White	1	
Black–Black	1.54***	(1.30–1.84)
Black male–White female	1.53***	(1.18–1.99)
White male–Black female	1.50***	(1.12–2.02)
South Asian–South Asian	0.61***	(0.53–0.69)
South Asian male–White female	0.79	(0.53–1.18)
White male–South Asian female	1.19 ^{aaa}	(0.77–1.84)
Other Asian–other Asian	0.67***	(0.50–0.90)
Other Asian male–White female	1.14 ^a	(0.68–1.90)
White male–other Asian female	0.77	(0.54–1.10)

can be requested from the author. The conclusion from Table 5 is that the heterogamy effect involving Whites and Blacks which was present in Model 1 disappeared in Model 2.

Finally, we also investigated whether the risks of divorce varied between gender combinations of mixed-ethnic marriages. We repeated the regressions from Table 5, but added gender into the equation by breaking down the mixed-ethnic marriages by ethnic and gender type. Here, we only present the full model which includes all demographic and socioeconomic variables. Because the effects of these control variables were similar to what was found in Model 2 of Table 5, we only present the odds ratios by couple type. From the overlapping confidence intervals in Table 6 we can see that there was no case where the divorce rates for White-ethnic minority couples differed by their gender mix. For Black-White couples the rates by gender mix are very close. For South Asian-White couples the divorce rate is higher when the male is White, whereas for Other Asian-White it is higher when the female is White.

6 Conclusion

In this paper, we used the ONS-LS data to examine the 10-year (1991–2001) risk of marital dissolution for mixed-ethnic unions compared with co-ethnic unions. This large and representative dataset provided the opportunity to explore patterns of divorce for mixed-ethnic unions, something which is not possible due to small number problems, when using other surveys such as the British Household Panel Survey (BHPS). The ONS-LS dataset also allowed us to control for a number of variables, which are difficult to obtain from traditional marriage and divorce registration data (Kalmijn et al. 2005). As pointed out by Orbuch et al. (2002), ethnicity may serve as a proxy for other socioeconomic variables such as income and education and it is therefore important to control for as many variables as possible to tease out the real ethnicity effect. We used information such as educational qualifications, economic activity, and housing tenure to explore whether

the factors in 1991 predicted the likelihood of divorce by 2001. This overcomes the problem of reverse causality that can occur when people's socio-economic conditions change after divorce.

Our results for the risk of marital dissolution demonstrate considerable variation between ethnic groups, although these differences are much reduced when adjusted for other characteristics, especially the age profiles of the different ethnic groups. Mixed-ethnic unions appear to have a risk of divorce which is close to the higher risk found for the two constituent co-ethnic unions. The results do not support the heterogamy model which posits that the risk of divorce for mixed-ethnic unions is higher than the risk of divorce for the corresponding origin groups. Instead our results support the convergence model: the likelihood of divorce of mixed-ethnic unions' falls between the higher and the lower risk showed by the component origin ethnic groups. That the risk for mixed-ethnic unions is close to the higher risk of the two origin groups may be attributable to the process of divorce. The spouse who comes from the ethnic group with a more tolerant attitude towards divorce is likely to be more proactive in the process of divorce. When there is a conflict between two partners the partner with a higher risk might propose divorce as one solution to the marriage and thus initiate the separation and divorce process. This is particularly relevant in the Western marriage legal system where a no-fault case is accepted as the basis for divorce. A partner can unilaterally demand to end the partnership without the consent of the other partner. This could result in the divorce rate for mixed-ethnic couples taking on the maximum for the corresponding co-ethnic rates. A study of the divorce process, particularly within a mixed-ethnic setting might throw more light on this interpretation of our results.

Although we used a unique and very rich dataset, we acknowledge that the data we used has some limitations. Despite the very large ONS-LS sample, our models included relatively small numbers of mixed-ethnic marriages. As a result some caution should be exercised in interpreting the results. Also, the data did not include information on age at the formation of marriage, or on the duration of marriage, both of which have previously been shown to be associated with risks of divorce. If different couple types (by ethnic composition) also show different patterns in the age at marriage, this might explain some of the effects found in this study. However, this would need further investigation. In this study, we controlled for age of both couples in 1991. This has at least partly accounted for the effect of age at marriage. This is because overall age at marriage and age for couples in 1991 should be correlated. Young couples are definitely those who are married at a young age and also have shorter durations of marriage. The situation for older people is more complicated. For example, older people could have married at an older age and thus have shorter marriage durations. Nevertheless, a large proportion of older people will have married at a relatively young age and have fairly long durations.

The BHPS is a panel dataset which provides age at marriage and duration of marriage. However, the BHPS has about 10,000 sample members and the number of people involved in mixed-ethnic unions is too small for a statistical analysis. Another issue which is likely to influence the outcomes of this study is that those in a mixed-ethnic union are a selected category of people, defined by characteristics which were not measured in the Census. However, the direction of bias caused by

these omitted variables is not clear. If people who are involved in mixed-ethnic unions are more likely to take risks, and are also more likely to break up when their partnership encounters problems, our results are upwardly biased. If the unmeasured characteristics make people in mixed-ethnic unions strongly committed to overcome any differences between partners (Janssen 2002), our estimates are too conservative. Overall, our results should be interpreted with caution and better regarded as an analysis of determinants of who divorces as opposed to an analysis of what conditions result in divorce.

Although mixed-ethnic unions have drawn scholarly interest for a long time, most research has been on the formation of mixed-ethnic unions. In contrast, studies on the stability of mixed-ethnic unions are scarce, and were mainly conducted in the U.S (Bratter and King 2008; Zhang and van Hook 2009). This research has filled a gap in our knowledge of mixed-ethnic marriages in Britain by examining the risk of divorce for mixed-ethnic couples; this has not been studied to date. Our results differ from previous studies where cross-nation partnerships in the Netherlands or in Sweden were found to display strong heterogamy effect in the risk of divorce (Dribe and Lundh 2011; Kalmijn et al. 2005). Our results support the ethnic convergence theory where the risk of divorce for mixed-ethnic marriages falls between the higher and the lower risk for the two constituent ethnic groups (Zhang and van Hook 2009). Further studies are needed to understand how values and traditions of ethnic groups, and differences in attitudes towards divorce, influence individuals who out-partner in their decisions when dealing with problems in their relationships.

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