

## **ABSTRACT**

The proportion of UK families with three or more children is high in European perspective. Commentators often assume that high rates of progression to third, fourth and higher order births result from the higher fertility of women who migrated to the UK from regions of the world where large families are common. Less attention has focused on the role of serial partnering where repartnered couples cement their commitment with a ‘shared child’. This paper provides new empirical evidence as to the relative importance of increased international migration and increased experience of multiple partnerships in fostering higher order births among British women now aged 45+ who were born 1940-1969. We conclude that migration from high fertility regions, and the experience of multiple partnerships are both associated with progression to third and fourth birth. However, the likelihood of going on to have a third or fourth birth has remained similar across these birth cohorts for women who were born in the UK (to UK-born parents), and those who have only been married once, suggesting that additional factors encourage large families in the UK.

## **KEYWORDS**

Completed family size; Parity progression; Third birth; Fourth birth; Fertility of immigrants; Multi-partner fertility.

## **EDITORIAL NOTE**

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# UNDERSTANDING THIRD AND FOURTH BIRTHS IN BRITAIN: WHAT ROLE DO INCREASED IMMIGRATION AND MULTIPLE PARTNERSHIPS PLAY?

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## 1. INTRODUCTION

The UK, as in much of Europe, has demonstrated a persistent two-child norm that has remained dominant despite overall fluctuations in fertility rates (Sobotka and Beaujouan, 2014). At the same time the UK continues to show relatively high levels of progression to third and fourth birth, in comparison with other European countries. In the UK in 2013, 15.6% of live births were third births and 9.4% were fourth or higher order births, compared with 7.9% and 2.6%, respectively, in Spain and 10.4% and 4.6% in Poland, for example (Eurostat, 2015). From a cohort perspective, completed family sizes have fallen from 2.36 among women born in 1940 to 1.91 for women born in 1969 (Office for National Statistics, 2015). However, this is in part driven by an increase in childlessness (rising from 11% to 18% for the same cohorts), with the proportion of women having two or three children remaining remarkably stable, at 36% and 22%, respectively, for the 1940 cohort and 37% and 18% for the 1969 cohort (Office for National Statistics, 2015). The proportion of women having a fourth birth fell from 18% in the 1940 cohort to 10% in the 1969 cohort – a notable decline but still remaining relatively high in a European context.

The question therefore arises as to how we can explain the relative propensity of British mothers to have three, four, or more children. Surprisingly little research has been undertaken on this matter, although recent research has shown that completed family sizes are significantly larger for women with low levels of education and that this is associated with an early age at entry into motherhood (Berrington et al., 2015). Attention among commentators and policy makers has tended to focus on two aspects: Firstly, the relationship between large family sizes and receipt of welfare benefits, including recent policy announcements to restrict child tax credit payments to the first two children (The Telegraph, 2015a; The Guardian, 2016); and secondly, the higher levels of childbearing among immigrant groups (The Express, 2015; The Telegraph, 2015b). There has been very little discussion in either the media or in policy debates concerning the role of partnership dynamics and specifically the high rates of partnership dissolution and repartnering seen in the UK (Galezewska et al., 2013) which might increase the proportion of women going on to have third, fourth and higher order births after repartnering.

In this paper we provide new empirical evidence examining two of these aspects (1) the role of childbearing to women born outside of the UK, and (2) the role of serial partnerships i.e. the number of women reporting two, three or more co-residential partnerships. Below we outline the background of these two social trends, why they are likely to be important contributors to higher order births and our specific research questions. Section 2 describes the retrospective partnership and fertility data used in the analysis. Section 3 contains the results which are discussed in the final section.

### **1.1. CHILDBEARING OF OVERSEAS-BORN WOMEN**

The proportion of live births in the UK that are to women born outside the UK has been steadily increasing – from 12.6% in 1995 to 27.5% in 2015 (McLaren, 2016). This is a result of the increased size of the foreign-born population (especially of reproductive age), but is also a result of higher rates of childbearing among non-UK born women who had an average Total Fertility Rate of 2.08 children per woman in 2015, compared to 1.76 for UK-born women (McLaren, 2016). Previous research clearly demonstrates an association between ethnicity and fertility, with higher fertility rates in most – but not all – immigrant groups than among the white British population (Coleman and Dubuc, 2010). Larger family sizes are particularly prevalent among women of Pakistani and Bangladeshi origin: Data from the 2013 UK Labour Force Survey indicate that, among families with dependent children, 12% of White British families had three or more dependent children, compared 19% of families of Black African/Caribbean origin, 35% of those of Pakistani origin and 47% of those from Bangladeshi origin (Office for National Statistics, 2014). It has also been shown that the differential fertility patterns of ethnic minorities are still apparent among second and subsequent generations who are born in the UK, although the differences are less pronounced than for first-generation migrants (Coleman and Dubuc, 2010). Recent evidence suggests that overall, the fertility patterns of second-generation migrants are closer to the UK average than those of first-generation migrants from the same country of origin, supporting the idea that fertility behaviour is subject to adaptation/assimilation across migrant generations (Dubuc, 2016). In turn, the increasing size of the second-generation migrant population in the UK means that the pace of overall convergence of fertility rates between ethnic groups is accelerating (Dubuc, 2016). This does not necessarily translate, however into convergence in parity progression and completed family size –

for example among UK-born women of Pakistani and Bangladeshi origin, parity-specific analyses suggest that their rates of progression to second, third and fourth birth are particularly high in comparison to native British women, while first birth rates show little difference (Kulu and Hannemann, 2016).

## **1.2. CHILDBEARING AFTER REPARTNERING**

There has also been a major demographic shift in partnering behaviour the 20<sup>th</sup> century. Since the Divorce Reform Act in 1971, it has become easier to dissolve a marriage and, at the same time, cohabiting partnerships have become more common (Perelli-Harris et al., 2017). Cohabiting partnerships are more unstable than marital partnerships (Beaujouan and Bhrolcháin, 2011). Individual partnership histories have, therefore, become more diverse with more people experiencing serial co-resident partnerships. The increased churning of partnerships across the life course affects childbearing in a number of ways. Partnership breakdown may lead to smaller completed family sizes due to the interruption of an individual's opportunities for childbearing. However, repartnering and childbearing within higher order unions, may offset this to an extent. Previous research suggests that forming a new partnership is associated with higher parity progressions (Thomson et al., 2012; Van Bavel et al., 2012; Beaujouan and Solaz, 2013). Furthermore, the prevalence of fertility across multiple partnerships has increased over time in the US, Australia, Norway and Sweden (Thomson et al., 2014). Some studies have found that there is no overall pronatalist effect of divorce on fertility but that divorce is associated with greater heterogeneity in women's childbearing experience (Ivanova et al., 2014; Van Bavel et al., 2012). The countries studied by Thomson and colleagues exhibit relatively high levels of divorce and separation – as does the UK (Galezewska et al., 2013).

The partnership commitment hypothesis states that couples want to consolidate their new union by parenthood, and leads us to expect additional childbearing, irrespective of the number of previously born children. Previous research for the UK supports this so called “commitment hypothesis” and emphasises the importance of a “shared child” among repartnered couples (Jefferies et al., 2000). Very little research in the UK has examined how the overall number of partnerships experienced across the life course has changed for more recent birth cohorts, and how this relates to completed

family size. Little is known about how trends in the overall number of co-residential partnerships differs from the trend in the number of marriages experienced. This paper provides new insights in all these areas.

### **1.3. AIM OF PAPER**

The aim of this paper is to examine the relative importance of (1) the increase in childbearing to foreign-born women, and (2) the increase in childbearing within second and higher order unions, in explaining the relatively high parity progression rates to third and fourth birth seen in Britain. We do this by undertaking a series of descriptive analyses of nationally representative data for Britain. We examine how parity progression rates differ according to country of birth and to partnership experience, and show how parity progression rates have changed over female birth cohorts, conditional upon country of birth and partnership experience. The final research question examines how much the female population who have reached age 45 has changed over time, in terms of their country of birth and their partnership experience.

We address the following six research questions:

1. How have completed family size and progression to third and fourth births changed for women living in Britain, born between 1940 and 1969?
2. How do completed family size and progression to third and fourth births differ by country of birth?
3. Conditional upon country of birth, how have completed family size and progression to third and fourth births changed across cohorts?
4. How do completed family size and progression to third and fourth births differ by partnership history in Britain?
5. Conditional upon partnership history, how have completed family size and progression to third and fourth births changed across cohorts?
6. How has the composition of these female cohorts changed, according to country of birth and partnership history before age 45 years?

## **2. DATA AND METHODS**

Information for a large sample of women collected over a long period is required to examine the changing family formation experiences of women broken down by cohort, country of birth and partnership experience. Below, we describe the two sources of data on British women that, when combined, allow us to compare the experiences of women born between the 1940s and the 1960s.

### **2.1. SAMPLE**

The sample is based principally on data from repeated rounds of the General Household Survey (GHS), later renamed the General Lifestyle Survey, a nationally representative cross-sectional survey of adults in Britain carried out between the years 1979 and 2009. A team of researchers at the ESRC Centre for Population Change harmonized these data to create a time series dataset (Beaujouan et al., 2014). Of key importance are the detailed retrospective fertility and partnership histories collected from female respondents, which can be used to establish women's patterns of childbearing and union formation/dissolution across their lives (Berrington et al., 2011). To supplement data on more recent cohorts, we combine these data with more up to date information from the ongoing UK Household Longitudinal Study (UKHLS), 'Understanding Society', a panel study of over 30,000 households in the UK (McFall, 2013). We use retrospective fertility histories collected in wave 1 of UKHLS to establish women's level and timing of childbearing, updated with new births occurring during the first four waves (2009-14) of the survey. The UKHLS also includes a comprehensive partnership history collected in wave 1 which we update using information on partnership formation and dissolution as reported in the panel waves. In total, we include information from 22,110 women reporting in the GHS, with a further 11,262 female respondents from UKHLS. The analyses are weighted to adjust for differential non-response and selection probabilities. GHS weights are standardised to the sample size in each year of the survey. UKHLS weights are based on cross-sectional characteristics at wave 1 and are also standardised to account for the relative size of the UKHLS sample.



## **2.2. MEASUREMENT OF KEY VARIABLES**

### **2.2.1. COMPLETED FAMILY SIZE AND PARITY PROGRESSION**

As we require estimates of completed fertility, we include only women who have reached aged 45 at interview). Previous analyses of the GHS found some under-reporting of past childbearing among women aged over 50, therefore our analyses of the GHS are limited to women aged under 50 at the time of the survey (Ni Bhrolchain et al., 2011). No such issues are present with the UKHLS data, therefore for the data from this survey we include women up to the age of 70 years at interview. Parity progression ratios (PPRs) refer to the probability that a woman after delivering any particular birth will ever proceed to the next birth. We present PPRs for progression to first, second, third and fourth birth.

### **2.2.2. COUNTRY OF BIRTH / SECOND GENERATION**

Country of birth is based on respondents' self-report at interview. Sample size restrictions mean that this variable cannot be broken down into very detailed categories, but the largest groups of immigrants – born in India, Pakistan/Bangladesh<sup>1</sup> and the Caribbean – can be separately identified. In addition, women born in other European countries (defined geographically rather than by EU status) are also included in a separate category. For those born in the UK, we are able to distinguish those whose parents were also born in the UK from those who had a least one parent born outside the UK i.e. second generation migrants. Although this is a relatively heterogeneous category, identifying second-generation migrants allows us to not only control for intergenerational effects of migration on fertility but to estimate the extent to which this group has contributed to overall changes in family size and parity progression across cohorts. In analyses broken down by cohort, small sample sizes mean that some groups have to be aggregated further – in particular, women born in India, Pakistan or Bangladesh are combined as 'South Asian'.

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<sup>1</sup> Evidence of period fertility based on estimates using the LFS suggest that fertility rates of Bangladeshi-born and Pakistani-born women are similar, at 3.6 and 3.5, respectively, but these are higher than estimates for Indian-born women, at 2.2 (Coleman and Dubuc, 2010).

### 2.2.3. PARTNERSHIP HISTORY

Both the GHS and UKHLS collect partnership histories from respondents at interview, including marriages and, from 2000 GHS onwards, all co-resident partnerships (irrespective of whether they were marital or non-marital). Using this information, we are able to produce an indicator of the number of partnerships experienced prior to age. We use this age cut-off as we are interested in fertility within these partnerships and live births after age 45 years are rare. However, prior to 2000, the GHS only collected information on previous marriages and not on past cohabiting partnerships. Therefore, we present two sets of analyses. First, we look at women's number of marriages before age 45 years. Second we use the subsample of women who were interviewed in 2000 or later from the GHS (plus the UKHLS sample) to look at the total number of co-resident partnerships before age 45 years.

In the following section we present a series of descriptive analyses. We present differences in parity distribution, parity progression ratios and completed family size within and across cohorts. We begin by investigating country of birth and then present the findings for partnership history. Finally we look at the changing composition of the female cohorts according to these two criteria.

### **3. RESULTS**

#### **3.1. PROGRESSION TO HIGHER ORDER BIRTHS AMONG UK-BORN AND NON UK-BORN WOMEN**

Table 1 shows the change in parity distribution and completed family size of women born in three cohorts from the 1940s to the 1960s. The overall completed family size fell from 2.22 births per woman among those born in 1940-49, to 2.01 among women born in 1950-59. This change was driven in part by an increase in childlessness (rising from 11% to 14.5%) and also to a fall in the rate of progression to higher order births. However, the changes are not large and there is virtually no change between the 1950-59 and 1960-69 cohorts of women in terms of parity progression or completed family size. In particular, the probability of progression to higher parities has remained relatively high in the UK: Four out of 10 women with two children go on to have at least three, whilst more than a third of women who have three children subsequently go on to have a least one more.

Table 2 shows that completed family sizes for these cohorts are, in general, lowest among women born in the UK (including second generation migrants) and in other European countries, at around 2.09. However, although completed family sizes are slightly higher among women born in all other countries, it is only among those born in Pakistan or Bangladesh that they are substantially increased, with a mean completed family size of 4.21. Looking at the parity distribution and PPRs, the likelihood of progression to both third and fourth birth is much higher for women born in Pakistan or Bangladesh, among whom more than half have four or more children. Nevertheless, progression to higher parities is relatively common even among those women born in the UK to UK-born parents; 43% of those who have two children go on to have three, and more than a third of these women then have at least one more child.

<b>Cohort</b>	<b>Parity</b>	<b>n (unweighted)</b>	<b>% (weighted)</b>	<b>PPR</b>
1940-49	0	1,855	11.0	0.890 0.854 0.468 0.382
	1	2,140	13.0	
	2	6,572	40.4	
	3	3,443	22.0	
	4+	2,070	13.6	
	Total	16,080		
	<i>Mean completed family size</i>		2.22	
1950-59	0	1,948	14.5	0.855 0.827 0.416 0.340
	1	1,992	14.8	
	2	5,195	41.3	
	3	2,363	19.4	
	4+	1,276	10.0	
	Total	12,774		
	<i>Mean completed family size</i>		2.01	
1960-69	0	576	13.7	0.862 0.814 0.432 0.353
	1	698	16.0	
	2	1,638	39.9	
	3	821	19.6	
	4+	511	10.7	
	Total	4,244		
	<i>Mean completed family size</i>		2.03	

**Table 1:** Parity distribution, parity progression ratios (PPR) and completed family size (all women). Britain, 1940-49, 1950-59 and 1960-69 cohorts.

Parity	UK with UK-born parents			UK born, 2 <sup>nd</sup> generation			Other Europe <sup>a</sup>			India			Pakistan/Bangladesh		
	n	%	PPR	n	%	PPR	n	%	PPR	n	%	PPR	n	%	PPR
0	3,586	12.5		356	14.9		127	12.8		36	7.9		11	4	
1	3,934	13.9	0.875	369	15.1	0.852	166	17	0.871	46	11.1	0.921	21	6	0.959
2	11,382	41.8	0.841	835	36.6	0.823	362	38.8	0.805	144	31.6	0.879	64	15.3	0.937
3	5,457	20.8	0.432	452	20.8	0.478	180	18.8	0.447	98	22.7	0.61	65	17.6	0.83
4+	2,851	11	0.346	294	12.7	0.379	115	12.5	0.399	102	26.7	0.54	197	57	0.764
Total	27,210	100		2,306	100		950	100		426	100		358	100	
<i>Mean completed family size</i>		2.09			2.08			2.09			2.7			4.21	

Parity	Caribbean			Other			Total		
	n	%	PPR		%	PPR		%	PPR
0	46	10.7		210	15.6		4372	12.7	
1	61	15	0.894	231	14.7	0.844	4828	14.0	0.873
2	121	29.8	0.832	493	34.5	0.826	13401	40.7	0.84
3	72	19.5	0.599	300	21.2	0.505	6624	20.7	0.445
4+	82	25.1	0.563	214	14.0	0.398	3855	11.9	0.365
Total	382	100		1,448	100		33,080	100	
<i>Mean completed family size</i>		2.53			2.14			2.12	

**Table 2:** Parity distribution, parity progression ratios (PPR) and completed family size (all women) according to country of birth. Britain, 1940-69 birth cohort.

**Note:** Europe refers to the geographical and not the political region (i.e. does not just include EU countries)

Cohort	Parity	UK with UK-born parents			UK born, 2 <sup>nd</sup> generation			South Asian <sup>a</sup>			Other			Total		
		n	%	PPR	n	%	PPR	n	%	PPR	n	%	PPR	n	%	PPR
1940-49	0	1,602	10.9		106	12.8		21	7.8		122	10.9		1851	11.0	
	1	1,846	12.9	0.891	117	14.9	0.872	19	6.9	0.921	156	14.1	0.891	2138	13.0	0.890
	2	5,848	41.4	0.855	285	35.0	0.829	69	23.2	0.925	366	34.9	0.842	6568	40.4	0.854
	3	3,004	22.2	0.457	168	22.5	0.516	54	19.1	0.728	215	20.3	0.535	3441	22.0	0.468
	4+	1,641	12.6	0.362	110	14.8	0.397	112	42.9	0.692	206	19.8	0.494	2069	13.6	0.382
	Total	13,941	100		786			275	100		1,065	100		16,067	100	
	<i>Mean completed family size</i>		2.19			2.19			3.41			2.39				2.22
1950-59	0	1,561	14.5		173	16.1		20	5.7		192	16.1		1946	14.5	
	1	1,593	14.8	0.855	160	14.2	0.839	35	11.1	0.944	204	16.2	0.839	1992	14.8	0.855
	2	4,274	42.5	0.827	380	38.2	0.831	98	26.1	0.882	443	36.5	0.807	5195	41.3	0.827
	3	1,862	19.1	0.399	194	20.2	0.452	75	21.9	0.687	231	20.2	0.461	2362	19.4	0.416
	4+	897	9.1	0.322	113	11.3	0.359	125	35.3	0.617	140	11.0	0.353	1275	10.0	0.340
	Total	10,187	100		1,020	100		353	100		1,210	100		12,770	100	
	<i>Mean completed family size</i>		1.97			2.03			3.20			2.01				2.01
1960-69	0	423	13.3		77	15.9		6	4.2		69	16.4		575	13.7	
	1	495	15.7	0.866	92	17.7	0.841	13	9.6	0.957	98	18.1	0.837	698	16.0	0.862
	2	1,260	41.0	0.819	170	36.0	0.790	41	32.5	0.899	167	35.5	0.784	1638	39.9	0.814
	3	591	19.7	0.422	90	18.6	0.458	34	22.7	0.623	106	19.2	0.459	821	19.6	0.432
	4+	313	10.2	0.341	71	11.8	0.388	62	30.9	0.576	65	10.9	0.362	511	10.7	0.353
	Total	3,082	100		500	100		156	100		505	100		4,243	100	
	<i>Mean completed family size</i>		2.02			2.03			2.95			1.95				2.03

**Table 3:** Parity distribution, parity progression ratios (PPR) and completed family size (all women) according to country of birth. Britain, 1940-49, 1950-59 and 1960-69 cohorts.

**Note:** South Asian includes women born in India, Pakistan or Bangladesh.

Table 3 shows that, across cohorts, the completed family size of women born in the UK to UK-born parents has remained relatively stable at around two children, ranging from 2.19 in the 1940-49 cohort to 1.97 in the 1950-59 cohort. Progression to higher parities also shows little change across cohorts in the native-born group, with the same being true for second generation migrants born in the UK. In contrast, completed family sizes of women born outside the UK have, if anything, fallen.

We conclude that although progression to higher order births is more common among women born overseas, especially those from Pakistan and Bangladesh, rates of progression to third and fourth birth have remained high for the native population and these rates are only just below the overall national average.

### **3.2. MULTIPLE PARTNERSHIPS AND PROGRESSION TO THIRD AND FOURTH BIRTH**

Table 4a shows the parity distribution of women in cohorts born 1940-69 according to their reported number of marriages before the age of 45 years. Overall, for these cohorts, relatively few women have been married twice (around 14%) or three times (around 1%). Among those who have never married, levels of childlessness are significantly higher with 60% not having any children. Levels of childlessness among those who have at least one marriage are fairly stable at around 7-8% irrespective of whether they were married once, twice or three times. In contrast, the likelihood of progressing to a third or fourth birth increases rapidly for those who have been married more than once. Among women married only once, the PPRs for progression from second to third and from third to fourth birth are 0.425 and 0.338, respectively, compared with 0.645 and 0.578 for women who report three or more marriages. Completed family size is also higher among those who report three or more marriages, at 2.78, compared with 2.20 among women reporting just one marriage.

Similar patterns are observed when all partnerships (irrespective of whether they were marriage or cohabitation) are considered (Table 4b), with the PPR for progression from third to fourth birth rising from 0.321 among women reporting just one partnership to 0.447 among those reporting three or more partnerships. However,

childlessness is also more common among women with three or more partnerships than among women with just one partnership (17.2% versus 10.4%), therefore overall no difference is found in completed family size among women who have at least one partnership. These findings are consistent with earlier research which showed no overall difference in completed family sizes, but an increase in the heterogeneity of childbearing among those with multiple partnerships (van Bavel et al., 2012).



Parity	NUMBER OF MARRIAGES														
	None			One			Two			Three or more			Total		
	n	%	PPR	n	%	PPR	n	%	PPR	n	%	PPR	n	%	PPR
0	1,404	60.2		2,283	8.7		398	8.7		25	7.4		4110	12.6	
1	415	16.2	0.398	3308	13.4	0.913	704	16.4	0.913	41	12.9	0.926	4468	14.0	0.874
2	298	11.8	0.593	10757	44.8	0.853	1471	35.0	0.820	91	28.3	0.861	12617	40.8	0.840
3	155	6.1	0.500	5065	21.9	0.425	936	22.5	0.533	68	21.7	0.645	6224	20.8	0.444
4+	150	5.7	0.481	2607	11.2	0.338	690	17.4	0.436	96	29.7	0.578	3543	11.8	0.362
Total	2,422	100		24,020	100		4,199	100		321	100		30,962	100	
<i>Mean completed family size</i>		0.87			2.20			2.33			2.78			2.12	

**Table 4a:** Parity distribution, parity progression ratios (PPR) and completed family size (all women) according to number of marriages by age 45 years. Britain, 1940-69 birth cohort.

Parity	NUMBER OF PARTNERSHIPS														
	None			One			Two			Three or more			Total		
	n	%	PPR	n	%	PPR	n	%	PPR	n	%	PPR	n	%	PPR
0	590	70.8		1494	10.4		499	12.7		143	17.2		2726	13.8	
1	123	12.4	0.292	1893	13.6	0.896	673	17.7	0.873	145	17.7	0.828	2834	14.5	0.861
2	76	7.5	0.575	6098	45.4	0.848	1,308	35.7	0.797	232	29.3	0.786	7714	41.1	0.832
3	50	4.7	0.555	2722	20.8	0.403	748	20.5	0.487	157	19.8	0.550	3677	20.0	0.426
4+	49	4.6	0.494	1380	9.8	0.321	487	13.4	0.395	129	16.0	0.447	2045	10.5	0.344
Total	888	100		13,587	100		3,715	100		806	100		18,996	100	
<i>Mean completed family size</i>		0.64			2.11			2.11			2.10			2.05	

**Table 4b:** Parity distribution, parity progression ratios (PPR) and completed family size (all women) according to number of co-resident partnerships by age 45 years. Britain, 1940-69 birth cohort.

Cohort	Parity	NUMBER OF MARRIAGES											
		None			One			Two or more			Total		
		n	%	PPR	n	%	PPR	n	%	PPR	n	%	PPR
1940-49	0	543	72.3		1,064	7.8		195	8.1		1,802	11.0	
	1	101	13.1	0.277	1,632	12.7	0.922	328	14.6	0.919	2,061	13.0	0.889
	2	45	5.6	0.526	5,591	43.9	0.862	708	32.1	0.841	6,344	40.3	0.854
	3	29	3.8	0.617	2,783	22.9	0.448	513	23.8	0.585	3,325	22.1	0.469
	4+	40	5.2	0.574	1,506	12.7	0.357	434	21.4	0.473	1,980	13.5	0.379
	Total	758	100		12,576	100		2,178	100		15,512	100	
	<i>Mean completed family size</i>		0.64			2.27			2.49			2.22	
1950-59	0	642	63.5		995	9.9		189	9.5		1,826	14.5	
	1	170	15.5	0.365	1,320	14.1	0.901	331	17.6	0.906	1,821	14.7	0.855
	2	122	10.9	0.575	4,070	45.6	0.844	682	37.6	0.806	4,874	41.4	0.828
	3	57	5.0	0.480	1,778	20.9	0.400	374	20.5	0.485	2,209	19.4	0.415
	4+	59	5.0	0.500	836	9.5	0.313	271	14.9	0.421	1,166	10.0	0.339
	Total	1,050	100		8,999	100		1,847	100		11,896	100	
	<i>Mean completed family size</i>		0.78			2.11			2.21			2.01	
1960-69	0	219	37.9		224	9.1		39	7.7		482	13.6	
	1	144	21.7	0.622	356	14.6	0.909	86	17.7	0.923	586	16.2	0.863
	2	131	21.8	0.651	1,096	46.3	0.839	172	34.0	0.808	1,399	40.5	0.812
	3	69	11.2	0.461	504	20.8	0.393	117	23.6	0.544	690	19.6	0.422
	4+	51	7.5	0.400	265	9.2	0.306	81	17.0	0.419	397	10.0	0.338
	Total	614	100		2,445	100		495	100		3,554	100	
	<i>Mean completed family size</i>		1.33			2.11			2.34			2.01	

**Table 5a:** Parity distribution, parity progression ratios (PPR) and completed family size (all women) according to number of marriages. Britain, 1940-49, 1950-59 and 1960-69 cohorts.

Cohort	Parity	NUMBER OF PARTNERSHIPS														
		None			One			Two			Three or more			Total		
		n	%	PPR	n	%	PPR	n	%	PPR	n	%	PPR	n	%	PPR
1940-49	0	138	81.6		314	8.7		85	11.5		14	12.9		551	12.0	138
	1	24	12.4	0.184	419	12.2	0.914	120	16.6	0.885	14	13.3	0.871	577	12.9	24
	2	3	1.0	0.325	1,567	45.4	0.867	223	31.7	0.812	34	37.1	0.847	1,827	41.3	3
	3	6	2.6	0.841	749	22.1	0.427	173	24.0	0.559	21	22.1	0.497	949	21.6	6
	4+	6	2.4	0.481	431	11.7	0.346	111	16.2	0.403	16	14.6	0.398	564	12.1	6
	Total	177	100		3,480	100		712	100		99	100		4,468	100	177
	<i>Mean completed family size</i>		0.34			2.22			2.25			2.22			2.15	
1950-59	0	352	72.7		942	11.1		319	13.4		92	18.9		1,705	14.7	352
	1	61	11.0	0.273	1,139	14.0	0.889	387	17.1	0.866	87	17.5	0.812	1,674	14.6	61
	2	42	7.2	0.597	3,527	45.4	0.843	784	36.7	0.803	137	28.6	0.784	4,490	41.2	42
	3	29	5.1	0.561	1,502	20.3	0.394	416	19.7	0.472	91	18.9	0.551	2,038	19.4	29
	4+	25	4.0	0.440	707	9.2	0.312	277	13.1	0.399	76	16.2	0.462	1,085	10.0	25
	Total	509	100		7,817	100		2,183	100		483	100		10,992	100	509
	<i>Mean completed family size</i>		0.62			2.08			2.08			2.05			2.01	
1960-69	0	100	54.6		238	10.5		95	11.7		37	15.6		470	13.3	100
	1	38	16.3	0.455	335	14.4	0.895	166	20.2	0.883	44	20.1	0.843	583	16.2	38
	2	31	15.0	0.641	1,004	45.5	0.839	301	36.7	0.771	61	27.3	0.762	1,397	40.7	31
	3	15	5.7	0.486	471	20.8	0.394	159	19.5	0.461	45	20.5	0.575	690	19.7	15
	4+	18	8.4	0.596	242	8.8	0.298	99	11.9	0.379	37	16.4	0.444	396	10.1	18
	Total	202	100		2,290	100		820	100		224	100		3,536	100	202
	<i>Mean completed family size</i>		0.98			2.08			2.06			2.14			2.02	

**Table 5b:** Parity distribution, parity progression ratios (PPR) and completed family size (all women) according to number of cohabiting partnerships. Britain, 1940-49, 1950-59 and 1960-69 cohorts.

Tables 5a and 5b examine whether the relationships between partnership experience and childbearing remained stable across the birth cohorts. For the largest group of women, that is those who experienced just one marriage, completed family size and PPRs remain reasonably stable across the three cohorts, with only a very slight reduction in completed family size from 2.27 in the 1940-49 cohort to 2.11 in the 1960-69 cohort (Table 5a). Moreover, progression to higher parities remains relatively high over time, even among those with only one marriage with PPRs for progression from second to third birth of 0.448 in the 1940s cohort and 0.393 in the 1960s cohort. In those who report two or more marriages, there is also only moderate change across cohorts, but if anything there is a decline in fertility, with completed family size falling from 2.49 to 2.34, and the PPR for progression from second to third birth falling from 0.585 in the 1940s cohort to a low of 0.485 in the 1950s cohort. In fact, the most pronounced changes are observed among women who report no marriages as childbearing outside marriage has become increasingly common. For example, the proportion of women reporting no marriages who remain childless halved from 72.3% among women born in the 1940s to 37.9% among those born in the 1960s. Reflecting this change, the PPRs for progression from zero to one births rose from just 0.277 in the 1940s cohort to 0.622 in the 1960s cohort.

Table 5b shows the findings when all partnerships (both marriages and cohabitations) are considered. Among those who experience just one partnership prior to age 45 there is a slight reduction in progression to third and fourth births for more recent birth cohorts. However, for those who have experienced three or more partnerships, the chances of a third or fourth birth have increased. Thus we see some divergence over the cohorts in the childbearing patterns of those who have just one partnership, and those who have three or more partnerships who are either more likely to remain childless, or to progress to third and higher order births. For example, among women born in the 1960s, 46% of women who had three or more partnerships progressed from third to fourth birth, as compared with only 31% of those with only a single partnership.

In conclusion we find considerable differences in the likelihood of progressing to higher order births according to partnership history. The differences are of similar magnitudes to differences according to country of birth. Thus if there have been

changes in the composition of the UK population according to either country of birth or partnership experience, this will go some way to explain the persistence of large family sizes in the UK. This leads us to our final research question which asks the extent to which the composition of cohorts born between 1940 and 1969 have changed according to country of birth and partnership dissolution.

### **3.3. CHANGING COMPOSITION OF COHORTS BY COUNTRY OF BIRTH AND PARTNERSHIP EXPERIENCE**

Table 6 shows that the proportion who were born in the UK to UK-born parents fell from 87% in the 1940-49 cohort to 81% in the 1950-59 cohort. This was offset by an increase in second-generation migrants from 5% to 8% and ‘other’ migrants from 3% to 5%, as well as small increases in the remaining groups of women born outside the UK. Very little change is observed between the later two cohorts. These patterns can, in part, be linked to historical patterns of migration in the UK; a post-war rise in immigration, peaking in the early 1960s, boosted the proportion of first-generation migrants among women of childbearing age for the cohorts born in the 1940s and, to an extent, the 1950s. As shown in Table 6, in the more recent cohorts born in the 1960s, the children of these original migrants (i.e. second generation migrants) become more important. The overall fertility impact of immigration includes the direct effect of the childbearing of migrant women, plus any fertility differentials seen among second and subsequent generations (Dubuc, 2016). The relatively small increase in proportion of women born overseas across cohorts born 1940-69 reflects the fact that our sample of women aged 45+ does not include the significant numbers of women who migrated to the UK in their twenties during the 21<sup>st</sup> century (Robards and Berrington, 2016). A point to which we return later on.

Our descriptive analyses show that cohort changes in the likelihood of experiencing more than one co-residential partnership prior to age 45 are much larger than cohort changes in country of birth distribution. Therefore, partnership changes are likely to be more important in propping up relatively large families among women who have at least one child. The proportion of women who reported having no marriages before the age of 45 years increased gradually across cohorts, rising from 5% of women

in the 1940-49 cohort to 18% of those in the 1960-69 cohort. This was largely offset by a decrease in the proportion having just one marriage, falling from 81% to 64% between the 1940s and 1960s cohorts. The proportion having more than one marriage showed little change across cohorts. Looking at the subsample for whom information on all co-resident partnerships (including marriages and cohabitations) was available, the proportion of women who reported no partnerships increased only slightly, from 3.9% to 5.0%. As for marriages only, the proportion reporting only one co-resident partnership fell substantially from over three quarters (78%) to just under two-thirds (64%). However, the proportion of women reporting two partnerships increased from 16% to 24% and the proportion reporting three or more partnerships trebled from 2% to 7%. Taken together, these findings suggest that repartnering has become more common across the three cohorts represented here, but this is driven more strongly by cohabitations than by marriages.

In summary, for women born 1940-1969, cohort changes in partnership composition have been greater than cohort changes in distribution by country of birth.

	COHORT					
	1940-49		1950-59		1960-69	
	n	%	n	%	n	%
<b>Country of birth</b>						
UK with UK-born parents	13,996	87.1	10,242	81.0	3,118	80.0
UK born, 2 <sup>nd</sup> generation	796	5.0	1,042	8.0	518	9.6
Other Europe	483	3.1	343	2.7	124	3.1
India	182	1.1	187	1.4	57	0.8
Pakistan/Bangladesh	93	0.5	166	1.0	100	0.7
Caribbean	168	0.8	170	0.9	44	0.5
Other	416	2.5	699	5.0	337	5.4
<i>Total</i>	<i>16,134</i>	<i>100.0</i>	<i>12,849</i>	<i>100.0</i>	<i>4,298</i>	<i>100.0</i>
<b>Number of marriages before age 45 years</b>						
0	820	5.3	1,144	9.3	675	17.6
1	12,579	81.1	9,000	75.5	2,445	68.2
2	2,042	12.8	1,698	14.0	459	13.2
3+	136	0.9	149	1.3	36	1.0
<i>Total</i>	<i>15,577</i>	<i>100.0</i>	<i>11,991</i>	<i>100.0</i>	<i>3,615</i>	<i>100.0</i>
<b>Number of co-resident partnerships before age 45 years</b>						
0	178	3.9	510	4.6	202	5.0
1	3,483	78.2	7,819	71.6	2,290	64.4
2	712	15.7	2,183	19.5	820	24.1
3+	99	2.2	483	4.3	224	6.6
<i>Total</i>	<i>4,472</i>	<i>100.0</i>	<i>10,995</i>	<i>100.0</i>	<i>3,536</i>	<i>100.0</i>

**Table 6:** Distribution of country of birth and partnership history among women living in the UK, by cohort.

#### 4. DISCUSSION

Our findings have demonstrated that among women who make the transition to motherhood in the UK, progression to third and fourth birth is by no means a minority experience – around one in five women in the cohorts studied here had three children and one in ten had at least four children. The likelihood of progression to third and fourth birth does vary markedly according to country of birth and partnership experiences, but our analyses have shown that these differentials according to partnership experience and country of birth have remained relatively stable across cohorts. A key finding of this work is that persistently high rates of progression to third

and fourth birth in the UK are not just attributable to women born outside the UK, nor to those who have more than one co-resident partnership during their reproductive years. For example, among those born in 1960-69 with two children 42% of UK-born women, whose parents were also born in the UK, go on to have a third child.

Our findings contribute to ongoing discussions around the role of immigration in contributing to fertility trends in the UK. Statistics suggest that immigration has in the past contributed to rising period total fertility rates, although not in a straightforward way due to, for example, differences in the peak age at childbearing according to country of birth (Tromans et al., 2009). However, how this relates to parity progression and completed family size is less clear. There is an assumption that the persistence of large families in the UK is in part a consequence of the relatively high levels of immigration from source regions which traditionally have large families such as Pakistan and Bangladeshi (Dorman, 2014; Robards and Berrington, 2016), and that this may also apply to second-generation migrants from these regions (Coleman and Dubuc, 2010). Our descriptive findings suggest that women from Pakistan and Bangladesh are indeed much more likely to have third and fourth births than those born in the UK or other countries. However, parity distributions and completed family size among women born in the UK to UK-born parents remained relatively stable among cohorts of women born between the 1940s and the 1960s, while completed family sizes and rates of progression to higher order births declined for the South Asian and other migrant groups. Moreover, the contribution of Pakistani- and Bangladeshi-born women to overall completed family size in the UK is relatively minor given that they represent only around 1% of women born in 1940-69.

Given the size of cohort changes in the likelihood of experiencing serial partnering, the role of repartnering and second family formation, on progression to higher-order births is likely to be more substantial. Progression to third and fourth birth is more common among women who have had multiple marriages or cohabiting partnerships during their reproductive years. This is consistent with the notion that a repartnered couple may have a desire for a shared child to consolidate their relationship, described as a 'commitment effect' (Ivanova et al., 2014). Furthermore, although completed family sizes were larger for women who reported more than one marriage than for those who had only one marriage, when all co-resident partnerships were taken



into account this difference was counteracted by a higher level of childlessness among women with multiple partnerships. Therefore, although the proportion of women having more than one co-resident partnership has increased across the cohorts included in this analysis (mainly driven by an increase in cohabitations), this does not appear to have had a net impact on completed family sizes. These findings are consistent with earlier work which suggested that increases in serial partnering tended to increase the heterogeneity of completed family sizes across women, and may not have an overall net effect on the average (van Bavel, 2012).

Our findings provide evidence that for cohorts of women who have reached age 45 (and can therefore be assumed to have completed their childbearing), women born outside the UK are not the main contributors to higher parity progressions or larger completed family sizes. However, given that immigration to the UK has increased substantially in recent years (Office for National Statistics, 2016c), it is possible that this could change for more recent cohorts who have yet to reach the end of their reproductive lives. The proportion of births to foreign-born women in England and Wales has been increasing steadily from 11.6% in 1990, reaching 27.5% in 2015 (McLaren, 2016). Nevertheless, there are a number of reasons why the impact of this increased immigration on transitions to higher order births is likely to be limited. First, the overall proportion of births to foreign-born women is inflated by the fact that the age structures of the female population differ according to migration status, with a higher proportion of foreign-born than UK-born women being at the ages of peak fertility (25 to 34 years) (McLaren, 2016). Second, the total fertility rates of immigrant groups are sensitive to the timing of migration (Kulu, 2005; Dubuc, 2012), and are dependent on age, country of origin and the reason for migration (Robards and Berrington, 2016), meaning that period measures of fertility are affected by tempo effects associated with arrival in the UK. The period TFR in 2011 was around 2.76 for African-born women, 2.58 for women born in the Middle East, and 2.43 for women born in Asia (Dorman, 2014). However, these period TFRs may not reflect parity progression and completed family sizes among these immigrant groups. Finally, at least since 2004, the most rapid increase in immigration to the UK has been observed for EU migrants from post-accession countries such as Poland; our findings show that women who migrate to the UK from other European countries have parity distributions and completed family sizes that are very similar to those for UK-born women. Therefore, it

is questionable whether this migrant group will have a notable impact on overall family sizes in the UK.

The impact of immigration on childbearing in the UK is affected by the childbearing behaviour of the growing second-generation. We have shown that the size of the second-generation grew significantly across cohorts born 1940-1969. As women born to migrants arriving in the UK from the 1970s onwards start to reach age 45, their contribution to completed family size will continue to increase. Recent findings suggest that whilst many second-generation ethnic groups have patterns similar to those of native UK women, second-generation women of Pakistani and Bangladeshi origin are experiencing higher third-, and fourth-birth rates than UK native women (Kulu and Hannemann, 2016).

Recent years have also seen increasing diversity of partnership patterns over the life course among families in the UK. Since the 1970s, there has been a steady decline in marriage rates in the UK accompanied by a rise in the age at first marriage (Office for National Statistics, 2016b), while cohabiting couples (with or without dependent children) were the fastest growing family type during the past decade (Office for National Statistics, 2016a). The proportion of births occurring within cohabitation in the UK more than tripled between the 1980s and the 2000s (Perelli-Harris et al., 2010). Given that our findings suggest increases in cohabitation underlie a concomitant rise in the prevalence of repartnering across cohorts, the continued increase in the prevalence of cohabiting families in recent years could mean that repartnering also continues to become more common among more recent cohorts of women. However, as noted above, this will not necessarily lead to an increase in fertility overall due to the increased prevalence of childlessness associated with having multiple partnerships over the life course (presumably an indicator of union instability), offsetting the contribution of additional children conceived to consolidate a new relationship.

In conclusion, using a large, unique sample of British women with information collected for a period of 30 years, we have provided new understanding of how patterns of parity progression and completed family sizes vary between different demographic groups and across cohorts. Our findings suggest that increased immigration and especially increases in the number of serial partnerships contributed to the relatively

high prevalence of progression to higher order births in the UK for cohorts born 1940-1969. However, rates of progression to third and fourth birth have remained high for native-UK women, including those who have only had one co-residential partnership. It seems that other socio-economic factors play a role in explaining higher order births in the UK. We have previously shown that education is an important determinant of completed family size in these cohorts, with more highly educated women tending to have smaller families (although this has changed little across cohorts) (Berrington et al., 2015). Age at first birth, which is strongly linked to education, is also a major factor in determining whether a woman progresses to higher parities. However, to effectively disentangle the predictors of higher order births requires more detailed, prospective data with a range of time-varying, prospective information on fertility and potential explanatory variables such as income, economic activity and other demographic and socioeconomic factors. In ongoing work, we plan to take advantage of the panel design of UKHLS to explore the role of these additional factors in predicting the transition to third and fourth birth.

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