

The proportion of marriages ending in divorce

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Even though cohabitation has become more prevalent in the last few decades, the majority of the adult population is married, and marriage is associated with a number of factors, such as educational outcome and health.¹ Understanding the married population is also an important part of understanding partnering behaviour and family formation and dissolution. The length of marriages and whether they are ended by death or divorce is therefore of interest to demographers and policy makers.

Key findings

- Divorce rates in 2005 suggest that approximately 45 per cent of marriages will end in divorce. Almost half these divorces will occur before couples reach their tenth anniversary.
- The proportion of marriages ending in divorce varies with age at marriage. Those who marry younger have higher proportions of marriages ending in divorce.
- Looking at recent cohorts, there is evidence that there is an end to increases between successive cohorts in the proportion of marriages ending in divorce.
- The cumulative proportion of marriages ending in divorce varies with previous marital status. Widows and widowers have similar proportions to spinsters and bachelors, whereas those who have previously divorced have higher proportions of marriages ending in divorce.
- Making the assumption that divorce rates and mortality rates remain unchanged from 2005, around 10 per cent of those marrying in 2005 will celebrate their diamond (60th) wedding anniversary, with 45 per cent of marriages ending due to divorce and 45 per cent of marriages ending due to death.

Introduction

Until the second half of the 20th century divorce was a relatively rare event. In 1901 there were 512 divorces in England and Wales. In 2001 there were 141,135. While this indicates a change in the behaviour of society, it also suggests a change in the methods and analysis required to understand this behaviour. William Farr, one of the founding fathers of

demography, would have been very surprised at the level of divorce seen today. There were only 289 divorces in 1882, the year before he died. Early demographers did not have to consider the complexities of divorce in their analysis of family formation, let alone cohabitation.

The relatively recent social phenomenon of high levels of divorce is particularly evident from a generational, or cohort perspective. Married cohorts are affected until individuals are no longer at risk of divorce. In theory, any married couple is at risk of divorce. In practice, divorce is unlikely beyond marriage durations of 35 years or more.

One example of a marriage cohort is those who celebrated their diamond (60th) wedding anniversary in 2007. These couples, who included the Queen and the Duke of Edinburgh, married in 1947, a year in which there were 401,210 marriages.² This was also a year that, at the time, saw a record number of divorces, 60,254. This large number of divorces has been attributed to the disruptive effect on relationships of the Second World War.

It was not until 1971 that the number of divorces was again more than 60,000 in one year, following the legislative changes introduced at the beginning of the 1970s.³ Currently, it is only possible to assess the impact on marriage and divorce of these changes using information on existing divorce behaviour. It is hoped that this will at least give an indication of how many couples might divorce in the future.

This article updates the detailed work carried out in 1996 by John Haskey concerning the proportion of marriages ending in divorce.⁴ It uses recent and historical information to present the most complete picture possible, and includes a detailed discussion of the methodology. The results show how the proportion of divorced individuals changes over time and, based on these changes, whether divorce is likely to become more or less prevalent in the future.

Understanding divorce trends

In order to understand divorce behaviour it is necessary to look beyond the number of people divorcing in a particular year. The first stage in developing a better understanding of divorce behaviour is to look at marriage and divorce rates, which control for the size of the population available to marry and at risk of divorce.

Figure 1 shows historic divorce rates for married females.⁵ It also shows the comparable marriage rate for females. Although rates for males are not shown, the trend for males is similar to that for females. This figure highlights the following:

- Divorce rates increased rapidly in the early 1970s. This rise is often attributed to changing legislation (the Divorce Reform Act 1969 and Matrimonial Causes Act 1973) and changing attitudes in society. Considering the long-term trend, and ignoring minor fluctuations, this increase can be seen as a step-change. Since 1985 divorce rates have remained relatively stable
- While divorce rates have remained stable, apart from the 1970s step-change, marriage rates have decreased in the long-term. It may be that recent years show a stabilisation of this decline, but it is too early to tell with certainty

Although the rates in the chart relate to separate populations there is clearly a relationship as they reflect flows into and out of the state of marriage. What is not entirely clear is whether divorce rates have been suppressed by the decrease in marriage rates. It may be that couples who would previously have divorced after some years of marriage are no longer marrying in the first place. It is also unclear how higher divorce rates impact on perceptions of marriage, and whether marriage has been devalued or become a more valued state because of the increased prevalence of divorce.⁶

Methodology

The divorce rates in Figure 1 are not sufficient for understanding the probability of divorce. In order to calculate this probability, it is necessary to estimate the proportion of marriages that end in divorce.

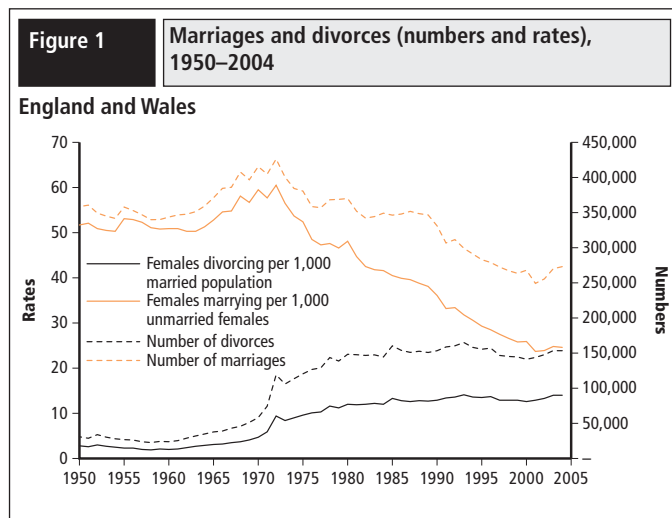
The two methods used previously were:⁴

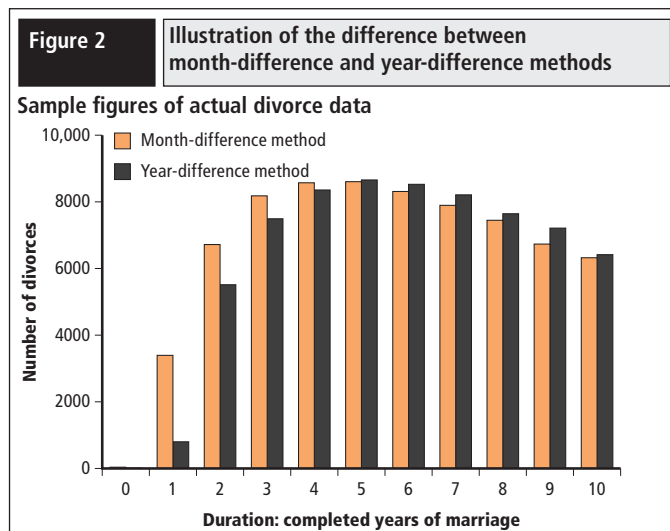
- Method one: The proportion of marriages that end in divorce, without adjusting for the effect of mortality and migration (a true cohort measure). This includes analysis by previous marital status.
- Method two: The overall proportion of marriages that end in divorce using a life table technique, including mortality (a period measure, based on a synthetic cohort).

The new methodologies in this article follow on from these two methods, and the pertinent aspects are discussed below, along with respective improvements.

One important question is how to calculate duration of marriage. In previous articles for the tables by age and previous marital status this was done by subtracting the year of marriage from the year of death or divorce (year-difference method). This method gives an imprecise distribution of marriage durations.⁷ For divorce, there is a more precise method available, which uses information collected by the courts on the months of marriage and divorce. It is the same method used by ONS in the annual publication of marriages and divorces.⁸ The month-difference method has been applied as an improvement to method one for analysis by age and marital status. However, when considering mortality, this method has not been used. This is because mortality data are only available in a suitable form by year of death.⁷

Figure 2 illustrates the difference between the month and year-difference methods for calculating completed duration of marriage. The main difference is for the early durations, in particular the first three years, where the month-difference method shows a larger number of divorces. This is because durations will be completed earlier using the month-difference method. The total number of divorces is the same for both methods (totalling all durations), so for durations larger than five years the year-difference method generally yields a slightly higher number of divorces for each individual duration.⁹





Accuracy of the estimates

It is important to note that there is a difference between the proportion that never divorce and the proportion that remain married. This is because divorce is not the only factor affecting the married population. Individuals may leave this population due to divorce or death. Couples may also enter or leave the population by migrating, in this case by entering or leaving England and Wales.

An additional problem is that the number of registered marriages in England and Wales is not an exact count of residents in England and Wales who marry. Marriages abroad (outside England and Wales) involving England and Wales residents are not registered.¹⁰ Additionally, some marriages registered in England and Wales will involve individuals who are resident outside England and Wales (according to population definitions of usual residence).

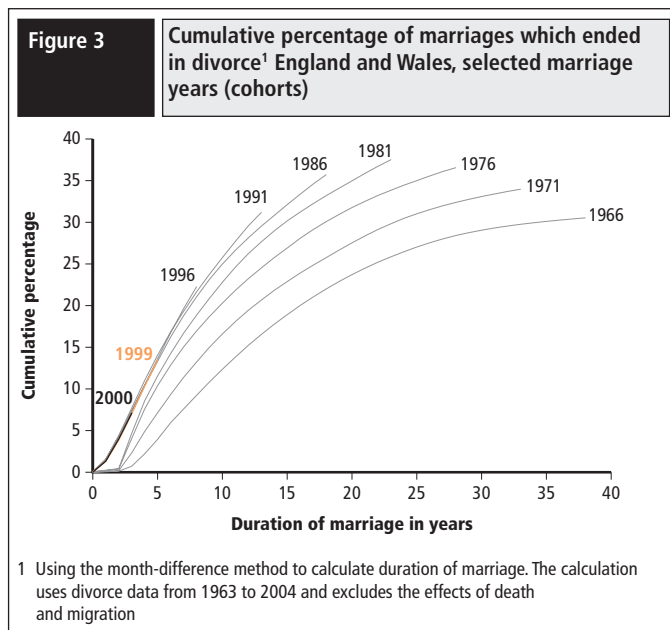
The same problem exists for divorces. For example, if one member of a couple has the possibility of divorcing in another country, they may choose to do so to obtain a more favourable divorce settlement.¹¹ It may be unlikely that residents of England and Wales would choose to divorce elsewhere or non-residents choose to divorce here. Nevertheless, it remains an issue for the accuracy of the calculations.

International migration was not included in previous calculations of the proportion that ever divorce because data were not available in sufficient detail. To a lesser extent, the new method in this article suffers from the same problem and conclusions regarding the effects of divorce should consider this uncertainty. For example, married couples migrating to England and Wales will increase the actual married population (the actual population at risk), despite the fact that the recorded population at risk remains the same. By using the 2001 marital status estimates, this article takes some account of migration up to 2001 (this is discussed later – see Box One).

The same issue exists for mortality data, where deaths may be under or overstated depending upon the international flows of married couples and the location of their deaths.¹²

Considering the above, there are a number of uncertainties surrounding the analysis of divorce proportions. In summary, these are:

- Marriages, divorces and deaths outside England and Wales to England and Wales residents
- Marriages, divorces and deaths inside England and Wales to non-England and Wales residents
- International migration of married couples (whose marriage was in



¹ Using the month-difference method to calculate duration of marriage. The calculation uses divorce data from 1963 to 2004 and excludes the effects of death and migration

England and Wales and death or divorce was not, or whose death or divorce was in England and Wales, but marriage was not). This has been mitigated to an extent by using the 2001 marital status estimates (explained later in Box One)

It may be that these factors cancel each other out to some extent, but it is not possible to say this with any certainty.

Marriages that end in divorce

Figure 3 shows the proportion of marriages ending in divorce for selected years of marriage (cohorts). It uses the month-difference method for calculating durations of marriage. Only selected years are shown because the missing years fit almost precisely in between those that are shown, and follow the pattern that the figure suggests. It is clear from this that more recent cohorts show larger proportions ever divorced for all durations of marriage, although in the last 20 years the cohorts have converged.¹³

Comparing Figure 3 with figures prepared a decade ago by Haskey,⁴ the behaviour of cohorts has followed the expected trend. Cumulative percentages divorced have increased for all cohorts, following a curved path until around 35 years of completed marriage. At this point the curves become virtually flat as the number of new divorces each year becomes very small. If anything, the most discernable difference between this figure and Haskey's equivalent is that the lines for the most recent cohorts are even more closely grouped together, suggesting a possible end to the increase between successive cohorts.

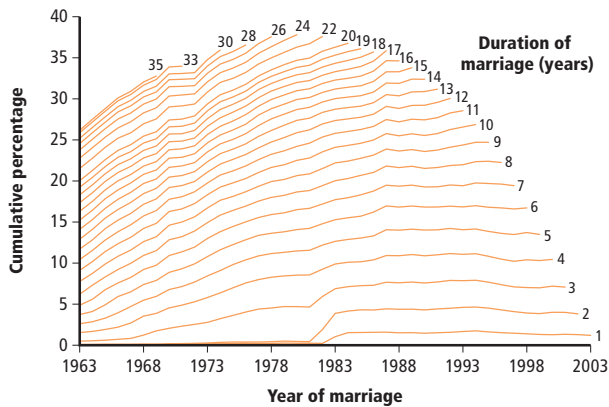
It is interesting to note that for cohorts marrying before 1986, there are no divorces for durations of marriage less than three years. This is because the Matrimonial and Family Proceedings Act 1984 changed the minimum interval of time which has to elapse between the date of marriage and that of being able to file a petition for divorce. Under the former act the minimum interval was three years, but the new act reduced this to one year.

Duration of marriage

To better understand the effect of marriage duration on the proportion ever divorced, it is possible to present the same data in a different way. Figure 4 uses the same data as Figure 3 (including intervening years) and presents distribution curves for durations of marriage. There are three interesting results:

Figure 4

Cumulative percentage of marriages ending in divorce¹, by duration of marriage (completed years) and year of marriage (cohort) 1963–2004



Note: For durations longer than 20 years, only certain series are shown to avoid confusion and illustrate the trends

1 Using the month-difference method to calculate duration of marriage. The calculation uses divorce data from 1963 to 2004 and excludes the effects of death and migration

- For years of marriage between 1963 and 1988 there is an increasing percentage of marriages ending in divorce (for each duration). For example, if you were married in 1978, you have less likelihood of celebrating your silver wedding anniversary than if you were married in 1963 (ignoring the effects of migration and death).
- For years of marriage between 1988 and 2003 the lines become more

horizontal. This demonstrates that the likelihood of divorce does not vary considerably if you were married between these years.

- There are some ripples in the chart for particular marriage years. These appear to suggest departures from, and returns to, the long-term trend. The introduction of the Matrimonial and Family Proceedings Act 1984, which allowed divorces for marriage durations under three years, is shown by the fact that the cumulative percentage is zero for one or two year durations of marriages prior to 1982.

Age and previous marital status

The number of divorces varies with age and previous marital status.¹⁴ Variation may therefore be expected between age, previous marital status and the proportion of marriages ending in divorce. Previous marital status refers to the marital status of an individual before they got married to the person they have now divorced. Age refers to the age at marriage.

Table 1 provides a summary of the results for a selection of ages where the marriages were first marriages (remaining results may be obtained from the authors on request). It uses the month-difference method for calculating durations of marriage. The results do not consider mortality or migration. However, they do illustrate the following:

1. Among those marrying for the first time, there is an increased likelihood of a marriage ending in divorce for lower ages at marriage.
2. There is a higher likelihood of marriages ending in divorce for bachelors as compared with spinsters.¹⁵

In reaching these conclusions it is appropriate to look at the 1966 and 1971 marriage cohorts. This is because these cohorts are the most recent

Table 1

Cumulative proportion of marriages ending in divorce,¹ for selected age at marriage, previous marital status, year of marriage and duration

Percentages

Spinsters		Duration of marriage (completed years)						
		5	10	15	20	25	30	35
Under 20	1966	6.4	19.3	28.6	35.2	39.4	42.1	43.4
	1971	11.9	26.3	35.2	41.6	46.3	48.9	50.1
	1976	16.6	30.8	39.7	46.2	50.4	52.6	
	1981	19.5	35.8	45.8	51.9	55.5		
	1986	24.4	42.0	51.5	56.7			
	1991	27.6	45.7	54.2				
	1996	29.5	47.5					
2000	27.1							
30–34	1966	1.7	5.9	9.4	12.1	13.4	14.6	15.1
	1971	3.5	8.7	12.8	15.4	17.1	18.1	18.6
	1976	5.4	11.6	16.0	19.3	21.5	22.7	
	1981	6.4	13.5	18.4	21.4	23.5		
	1986	7.3	15.0	20.4	23.5			
	1991	8.7	17.6	22.7				
	1996	9.2	17.0					
2000	8.8							
45–49	1966	0.5	2.6	4.0	4.6	5.0	5.3	5.3
	1971	1.4	3.6	4.7	5.0	5.5	5.6	5.6
	1976	2.3	4.9	6.1	6.8	7.1	7.3	
	1981	3.9	5.9	8.4	9.2	9.5		
	1986	4.7	8.1	9.7	10.7			
	1991	7.0	11.7	14.2				
	1996	5.0	10.2					
2000	5.8							

Bachelors		Duration of marriage (completed years)						
		5	10	15	20	25	30	35
Under 20	1966	8.1	24.0	34.8	42.2	46.7	49.5	50.9
	1971	14.2	30.8	40.4	47.1	51.7	54.3	55.5
	1976	19.8	35.5	45.0	51.5	55.6	57.7	
	1981	23.2	41.2	51.2	57.2	60.7		
	1986	28.3	46.4	55.6	60.7			
	1991	30.2	48.9	57.6				
	1996	31.1	49.4					
2000	27.6							
30–34	1966	2.3	8.1	12.7	16.2	18.6	19.8	20.5
	1971	4.7	11.7	16.7	20.3	23.0	24.4	25.0
	1976	7.3	14.6	19.9	24.0	26.6	28.1	
	1981	7.8	16.5	22.7	27.0	29.4		
	1986	9.0	18.7	25.1	29.1			
	1991	11.1	21.4	26.9				
	1996	11.5	20.4					
2000	10.1							
45–49	1966	1.4	5.4	7.9	9.1	9.5	9.7	9.8
	1971	3.4	7.2	9.1	10.5	11.0	11.2	11.2
	1976	5.0	9.2	11.6	13.5	14.3	14.6	
	1981	7.3	13.3	16.6	17.8	18.8		
	1986	7.4	13.4	17.2	18.5			
	1991	8.1	15.5	19.4				
	1996	8.6	15.0					
2000	7.2							

Note: The analysis excludes some missing values, although there were no more than 600 in any one year. The majority of these relate to those who were married at ages over 50 and hence the effect on the above analysis is minimal. The calculation uses divorce data from 1963 to 2005 and excludes the effects of death and migration. Given that data for 2006 are not included, some cohorts are missing one year. For example, the 1971 cohort has only completed 34 years.

1 Using the month-difference method to calculate duration of marriage.

completed cohorts for durations of 35 years or less.¹⁶ Comparing these cohorts with those marrying more recently, it appears that more recent marriages are more likely to end in divorce. This agrees with the results shown in Figure 3 and Figure 4. However, care should be taken in extrapolating these results. Although a larger percentage of marriages in 1996 have ended in divorce after ten years, compared with 1966, this does not mean that the same difference will be seen 35 years after 1996.

Table 2 shows the same results as Table 1, but for divorced men and widowers. For these marital statuses the numbers of marriages for ages under 20 are too small to give meaningful results. The results are presented for males only because the difference between males and females is broadly consistent with that shown in Table 1 (again the results may be obtained from the authors on request). Compared with Table 1, Table 2 shows:

1. Compared with bachelors, widowers who remarried show a similar percentage of marriages ending in divorce. In general, the percentages are slightly higher for widowers, and in a few specific cases (e.g. 1991 and 1996) there are material differences, not all of which are higher (e.g. 1996 cohort, ten year duration, age of marriage 45–49).
2. Previously divorced men who remarried have a higher percentage of marriages ending in divorce than both bachelors and widowers. These differences do not appear to be as large for more recent cohorts. For example, comparing divorced men marrying at age 30–34 with equivalent bachelors, the differences in percentage points are as follows:
 - a. 1966 cohort, 35 completed years: 12.5 percentage points
 - b. 1966 cohort, 25 completed years: 11.8 percentage points
 - c. 1981 cohort, 25 completed years: 12.2 percentage points
 - d. 1981 cohort, 10 completed years: 8.6 percentage points
 - e. 1996 cohort, 10 completed years: 5.9 percentage points

Despite this evidence, it is important to wait until the cohorts are completed before confirming these conclusions.

Although the figures for divorced and single women are not presented in Table 2, the differences between previous marital statuses (single, divorced

and widowed) are generally the same for men and women. However, widowers are more similar to bachelors than widows are to spinsters. Considering age of marriage, data for men and women show similar patterns, a smaller proportion of marriages ending in divorce as age at marriage increases (which is not the same as the marriage duration or marriage year).

Creating a life table that considers mortality

As stated previously, a thorough analysis of the proportion of marriages ending in divorce should consider mortality. If one married partner dies then two people will be removed from the married population due to this death, the person who died and the remaining partner, whose marital status changes to widowed. If mortality is not considered then divorce proportions will be lower because the denominator (total married population) will be too large. Of course, the effect of mortality depends upon the number of deaths among married individuals. It can be expected that mortality has a greater effect upon the old, and hence the older ages and longer durations of marriage.

Before analysing the proportion of married people that divorce, it is necessary to calculate the existing population of married couples. Furthermore, in order to use the life table method, the population must be disaggregated by duration of marriage. This allows an understanding of how divorce and death vary by age of marriage.

Previous articles created the existing married population using the number of marriages each year as a starting point. The number of divorces was removed according to duration of marriage. The main problem was mortality. Deaths data are not available by duration of marriage, only by age and marital status. The previous method resolved this issue by assuming that deaths for a given duration were equivalent to those occurring (by single year of age) for people who had the mean age at marriage for the relevant year of marriage.¹⁷

There are problems with this method. It may not include all deaths to married individuals, and the distribution of deaths may be incorrect. Finally, it takes no account of changes in the population by marital status due to migration. In order to provide a better solution for these issues a new methodology has been developed. This is outlined in Box One.

Table 2 Cumulative proportion of marriages ending in divorce,¹ for selected ages at marriage, previous marital status, year of marriage and duration

Percentages								
Divorced men		Duration of marriage (completed years)						
		5	10	15	20	25	30	35
30-34	1966	4.9	14.9	22.9	27.8	30.4	32.2	33.0
	1971	8.1	19.4	27.4	32.8	35.8	37.4	38.0
	1976	10.8	22.7	30.6	35.8	38.9	40.2	
	1981	12.2	25.1	33.7	38.7	41.6		
	1986	14.4	27.9	36.1	40.5			
	1991	15.1	28.8	35.4				
	1996	15.0	26.4					
2000	13.6							
45-49	1966	2.4	8.1	11.8	13.6	14.6	14.7	14.7
	1971	4.5	10.3	13.8	15.7	16.3	16.8	16.8
	1976	6.3	13.2	17.2	19.1	20.0	20.4	
	1981	8.5	16.2	20.7	22.8	23.6		
	1986	9.2	17.4	21.7	23.7			
	1991	9.5	17.4	21.2				
	1996	9.4	15.6					
2000	8.4							

Percentages								
Widowers		Duration of marriage (completed years)						
		5	10	15	20	25	30	35
30-34	1966	3.7	9.2	15.5	19.6	20.4	21.5	21.9
	1971	7.2	16.6	22.6	25.3	28.9	30.9	31.3
	1976	6.6	16.7	21.6	25.6	27.2	27.9	
	1981	9.1	16.2	21.8	26.0	28.7		
	1986	10.9	20.4	25.2	27.0			
	1991	12.9	26.7	36.9				
	1996	16.3	29.2					
2000	12.2							
45-49	1966	2.1	5.5	8.3	10.0	10.3	10.5	10.6
	1971	3.7	8.0	10.6	11.9	12.3	12.6	12.7
	1976	6.8	12.3	14.6	16.0	16.4	16.6	
	1981	7.5	12.4	15.3	16.4	17.3		
	1986	10.8	17.3	19.8	20.9			
	1991	8.8	13.4	16.8				
	1996	8.2	13.0					
2000	7.0							

Note: The analysis excludes some missing values, although there were no more than 600 in any one year. The majority of these relate to those who were married at ages over 50 and hence the effect on the above analysis is minimal. The calculation uses divorce data from 1963 to 2005 and excludes the effects of death and migration. Given that data for 2006 are not included, some cohorts are missing one year. For example, the 1971 cohort has only completed 34 years.

1 Using the month-difference method to calculate duration of marriage.

This new method suffers still from some of the issues with previous methods, largely because of data constraints. One additional issue is the decision to constrain to the estimated population (assumed to be the most appropriate method – see Box One, point 4). This is counterbalanced by the improved treatment of mortality and the consideration of migration prior to mid-2001 through the use of the marital status estimates as a starting point for the calculation.

The life table

Once the married population has been obtained by duration of marriage it is possible to create the life table. Table 3 shows the life table for marriage based on 2005 data, which was the most recent year for which data were available to calculate all aspects. A decision was made to use only one year so that the analysis was comparable with Haskey's

Table 3 Life table for marriage based on 2005 data for divorce and death

England and Wales

(a) Duration of marriage completed years, x (anniversary number)	(b) Probability of divorce interval to next stated anniversary	(c) Probability of death of one partner in the interval to next stated anniversary	(d) Number of marriages surviving to anniversary x	(e) Number of marriages ended – interval to next stated anniversary – divorce	(f) Number of marriages ended – interval to next stated anniversary – death	(g) Cumulative % of marriages ended before next stated anniversary – divorce	(h) Cumulative % of marriages ended before next stated anniversary – death	(i) Average number of years of life of marriage at anniversary x
0	0.0002	0.0026	100,000	22	259	0.0	0.3	30.9
1	0.0118	0.0026	99,719	1,178	260	1.2	0.5	30.0
2	0.0247	0.0027	98,281	2,427	266	3.6	0.8	29.4
3	0.0309	0.0028	95,588	2,952	266	6.6	1.1	29.3
4	0.0330	0.0026	92,370	3,048	242	9.6	1.3	29.3
5	0.0317	0.0026	89,079	2,820	229	12.4	1.5	29.3
6	0.0320	0.0027	86,030	2,756	232	15.2	1.8	29.3
7	0.0312	0.0029	83,042	2,592	239	17.8	2.0	29.4
8	0.0294	0.0031	80,211	2,357	249	20.2	2.2	29.4
9	0.0278	0.0033	77,605	2,154	255	22.3	2.5	29.4
10	0.0268	0.0034	75,196	2,012	259	24.3	2.8	29.3
11	0.0258	0.0036	72,925	1,884	264	26.2	3.0	29.2
12	0.0232	0.0038	70,776	1,643	272	27.8	3.3	29.1
13	0.0222	0.0040	68,861	1,532	278	29.4	3.6	28.9
14	0.0206	0.0042	67,051	1,383	283	30.8	3.9	28.6
15	0.0199	0.0045	65,384	1,300	293	32.1	4.1	28.3
16	0.0194	0.0048	63,791	1,239	305	33.3	4.5	28.0
17	0.0186	0.0051	62,247	1,159	317	34.5	4.8	27.7
18	0.0179	0.0052	60,771	1,087	317	35.5	5.1	27.4
19	0.0166	0.0057	59,368	984	339	36.5	5.4	27.0
20	0.0161	0.0060	58,045	933	346	37.5	5.8	26.6
21	0.0150	0.0064	56,765	854	361	38.3	6.1	26.2
22	0.0144	0.0068	55,550	800	377	39.1	6.5	25.8
23	0.0135	0.0072	54,373	735	391	39.9	6.9	25.3
24	0.0129	0.0076	53,247	687	404	40.5	7.3	24.8
25	0.0118	0.0080	52,157	616	420	41.2	7.7	24.3
26	0.0107	0.0085	51,121	548	436	41.7	8.2	23.8
27	0.0090	0.0092	50,136	450	459	42.2	8.6	23.3
28	0.0086	0.0097	49,227	425	475	42.6	9.1	22.7
29	0.0079	0.0101	48,327	380	490	43.0	9.6	22.1
30	0.0085	0.0106	47,457	402	504	43.4	10.1	21.5
31	0.0074	0.0112	46,551	347	524	43.7	10.6	20.9
32	0.0053	0.0118	45,681	244	538	44.0	11.1	20.3
33	0.0050	0.0127	44,899	226	568	44.2	11.7	19.7
34	0.0040	0.0125	44,105	178	552	44.4	12.3	19.0
35	0.0039	0.0130	43,375	171	564	44.5	12.8	18.3
36	0.0030	0.0141	42,640	129	601	44.7	13.4	17.6
37	0.0028	0.0152	41,910	119	639	44.8	14.1	16.9
38	0.0026	0.0167	41,152	107	687	44.9	14.8	16.2
39	0.0018	0.0183	40,359	74	737	45.0	15.5	15.5
40	0.0019	0.0201	39,548	76	795	45.0	16.3	14.8
41	0.0015	0.0221	38,676	58	853	45.1	17.1	14.2
42	0.0012	0.0242	37,765	47	916	45.1	18.1	13.5
43	0.0011	0.0264	36,802	39	972	45.2	19.0	12.8
44	0.0010	0.0289	35,791	35	1,033	45.2	20.1	12.2
45	0.0007	0.0317	34,723	26	1,100	45.2	21.2	11.5
46	0.0007	0.0347	33,598	22	1,166	45.3	22.3	10.9
47	0.0006	0.0380	32,409	20	1,231	45.3	23.6	10.3
48	0.0004	0.0418	31,159	14	1,301	45.3	24.9	9.7
49	0.0003	0.0460	29,844	9	1,372	45.3	26.2	9.1
50	0.0011	0.3116	28,462	31	8,869	45.3	35.1	8.5
55	0.0004	0.4990	19,562	9	9,762	45.3	44.9	6.3
60			9,791					

Box one

A new method for calculating the married population by duration of marriage

The new method involves the following stages:

1. Use the 2001 mid-year marital status estimates to obtain the married population (by sex and single year of age). The 2001 mid-year estimates are the closest to the 2001 census base and should therefore be the best estimate of the population by marital status.¹⁹
2. Allocate the 2001 married population to years of marriage according to the number of marriages that occurred in each year (by sex and age).²⁰
[Note: This assumes that deaths and divorces (and migrations) have occurred evenly across all years and age groups.]
3. It is reasonable to assume that age-specific deaths in a particular year occur evenly to all years of marriage. However, it is possible to adjust the population to account for the fact that divorce does not occur evenly across all years of marriage.²¹ This is done in two steps:²²
 - a. Total divorces prior to 2001 are added back to the 2001 married population evenly across all years
 - b. The same divorces are removed according to an accurate distribution by year of marriage based on actual events data²³
4. The results are constrained so that the married population does not exceed the population (by age) recorded by registration data. This is a nuance of the marital status estimates and affects only ages under 30. An additional adjustment is made for the small number of negative values that appear in the calculation. These are reallocated according to the calculated distribution of positive values.
5. The above creates a married population for mid-2001 by year of marriage (that can therefore be presented by duration of marriage). This is then aged on one year at a time by:
 - a. adding marriages and removing divorces according to the actual distribution of events
 - b. allocating marriages ending due to death across all years of marriage according to the married population distribution (by sex and age)²⁴

The result is a married population for end-2004 by sex, age and year of marriage. An average of the population by sex (for each year of marriage) can then be used to obtain the married population by year of marriage. This is then converted to duration of marriage and used as the denominator for the rates in the life table calculation.

previous work, which also used a multi-decrement life table technique to analyse and present the results.¹⁸ Unlike a standard mortality life table, which is calculated by age, this life table uses different durations of marriage (column (a)).

There are two ways that a married individual can leave the married population in the life table, divorce or death. The probability of either event happening, column (b) and (c), is calculated using 2005 vital events data as the numerator. The denominator for this calculation is the end-year 2004 married population. For divorce, durations are calculated using the month-difference method. For death, both the person dying and the surviving partner are considered because both individuals are no longer part of the married population. As outlined in Box One, an age-sex structure is calculated for each year of marriage. Age-sex specific death rates are then used to calculate death rates by each year of marriage for 2005.

Table 4

Percentage of marriages ending in divorce based on mortality and divorce rates 1993/94 and 2005 by duration of marriage

England and Wales			
Duration	1993/94 ¹	2005	Difference
10	25.4	24.3	-1.1
20	36.2	37.5	1.3
30	40.4	43.4	3.0
40	40.7	45.0	4.3

¹ See *Population Trends* 83 (endnote 4 of this article provides a full reference)

Table 5

Calculations of marriages ending in divorce Previous and current analysis

England and Wales	
Analysis based on data from:	Cumulative percentage of marriages ended by 50th anniversary due to divorce
1979-80	33.8
1987	37.2
1993-94	40.7
2005	45.3

Given a starting number of 100,000 marriages, Table 3 column (d) shows the number of marriages that will survive to the stated anniversary. Columns (e) and (f) show the number that will end in divorce or death before the next stated anniversary. This then allows the calculation in columns (g) and (h) of the cumulative percentage of marriages ended before next stated anniversary. Finally, column (i) shows the average number of years of life of marriage remaining. For example, couples celebrating their first anniversary can expect to be married, on average, for a further 30 years. This assumes that the marriage has remained intact for the stated duration and that divorce and mortality rates are as at 2005. It is important to note that figures for actual marriage cohorts may vary considerably from these results.

Discussion

Table 3 represents the average expected 'life' of a marriage assuming divorce and mortality rates in 2005. It is possible to compare this life table with the most recent previous life table based on data for 1993/94 (see *Population Trends* 83).⁴ Table 4 compares the percentage of marriages ending in divorce at specific durations from each of the life tables. It suggests that there has been an increase in the probability of divorce for longer durations of marriage. For marriage durations of 30 and 40 years there is evidence that divorce is having an increasing effect, with the chance of a marriage having ended in divorce by 40 years duration being about one tenth higher than a decade before.

Table 5 shows the 2005 analysis compared with previous analysis for the proportion of marriages that will have ended in divorce by 50th anniversary. This shows a steady increase in the impact of divorce, and suggests that although overall divorce rates appear fairly constant since increases in the early 1970s (Figure 1), there has been an increasing likelihood of marriages ending in divorce. There are, of course, a number of ways in which the actual life of a contemporary marriage will differ from the hypothetical results in Table 3, not least the fact that future divorce and mortality rates may change considerably. Indeed initial work used 2004 divorce rates, which were around 9 per cent higher than 2005. Using 2004 data, the proportion of marriages ending in divorce by 50th anniversary was approximately three percentage points higher.

There are potential weaknesses in the assumptions used to treat mortality. Nevertheless, the life table gives an informed view of how existing behaviour will affect marriage, while adjusting for previous deaths and divorce, and taking some account of migration by basing the calculation on the married population in 2001.

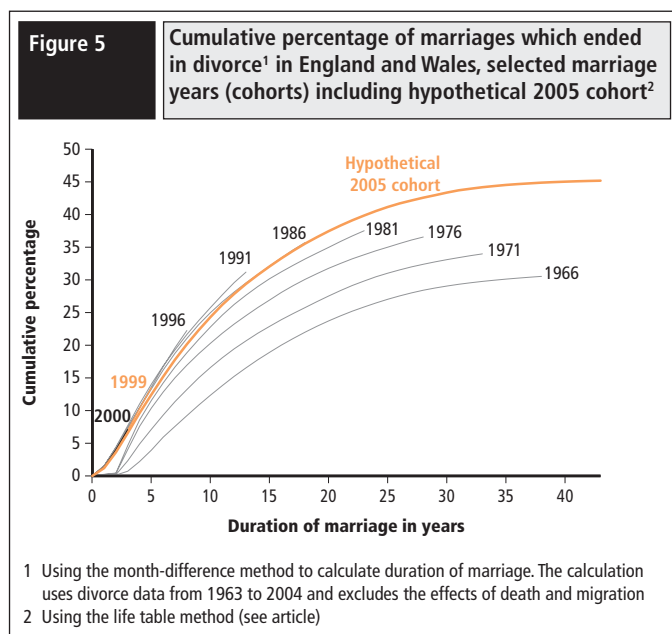
The life table results can be evaluated by adding them to Figure 3. This is shown in Figure 5, where the life table results are shown as the hypothetical 2005 cohort. Overall the pattern is very similar to the simple cohort analysis. The effects of divorce are most prominent at low durations of marriage. Otherwise, there is a small difference between the hypothetical 2005 cohort and the other more recent marriage years (1991 to 2001), which can be explained as follows. The cumulative proportion divorced for the hypothetical cohort is a product of the divorces occurring in 2005. This means that Figure 5 is not comparing like with like. The hypothetical cohort applies 2005 divorce numbers to the whole married population (including all cohorts, as at the end of 2004). The other cohorts are for particular years of marriage, for example the 1996 cohort includes only divorces of 1996 marriages.

The hypothetical cohort is based on 2005 divorce data, which includes fewer divorce events than many recent years. Provisional data showed the number of divorces in England and Wales fell by 8 per cent in 2005 to 141,750, compared with 153,399 in 2004. Apart from 2000 when there were 141,135 divorces, this was the lowest number of divorces since 1979. Given that the methodology uses the most recent divorces for 2005, the proportion of marriages ending in divorce will be largely influenced by the total number of divorces in 2005.

The advantage of this life table analysis is that the results provide the opportunity to consider the overall proportion of marriages that will survive for different durations. For example, approximately 10 per cent of marriages survive to celebrate their diamond (60th) anniversary, with 45 per cent of marriages ending due to divorce and 45 per cent of marriages ending due to death (Table 3). If divorce rates and mortality rates remain unchanged, then the analysis would provide an indication of future marriage survival.

The clear message of the analysis is that the risks of divorce and death vary by duration of marriage. Once marriages survive for a decade, under 31 per cent would end in divorce, and if marriages survive 20 years, this figure is almost 15 per cent. For marriages that have survived to longer durations, divorce is a rare event. Future improvements in mortality may therefore lead to a greater proportion of marriages achieving milestone anniversaries.

Although care should be taken in comparing the lines in Figure 5, the analysis does suggest that the hypothetical cohort provides a useful analysis that fits with the pattern of individual cohorts. The fall in divorces in 2005 may also be suggesting that cohort rises in divorce rates are slowing, although it remains to be seen whether the low level of divorce rates in 2005 will be sustained.



Conclusion

Assuming that divorce rates and mortality rates remain unchanged from 2005, around 10 per cent of those marrying in 2005 will celebrate their diamond (60th) wedding anniversary. If current divorce rates continue, 45 per cent of marriages will end in divorce. Comparison with previous analysis suggests that divorce is still rising generally, but that the rate of increase has slowed. Looking at recent cohorts, there is evidence of an end to increases between successive cohorts in the proportion of marriages ending in divorce. Divorce continues to be the predominant cause of the end of marriage at low durations. This analysis suggests that around half of divorces occur within the first decade of marriage. There may be a relationship between this and the fact that those who marry younger have higher proportions of marriages ending in divorce. Divorce proportions also continue to vary with previous marital status.

Acknowledgments

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References

1. See: *Focus on Families 2007*
www.statistics.gov.uk/StatBase/Product.asp?vlnk=14049
2. Royal couple are one in ten on diamond wedding anniversary
www.statistics.gov.uk/pdfdir/dwa1107.pdf
3. The Divorce Reform Act 1969 came into effect in England and Wales on 1 January 1971. The Act introduced a solitary ground for divorce - that of the irretrievable breakdown of marriage. The Act, subsequently consolidated in the Matrimonial Causes Act 1973, made it possible for the first time for divorce to be petitioned for on the couple's separation.
4. See:
Haskey J (1982) The proportion of marriages ending in divorce. *Population trends* 27, 4-8.
Haskey J (1989) Current prospects for the proportion of marriages ending in divorce. *Population Trends* 55, 35-37.
Haskey J (1996) The proportion of married couples who divorce: past patterns and current prospects. *Population Trends* 83, 25-36.
5. Data are for England and Wales. Unless otherwise indicated the remainder of the article uses England and Wales data.
6. ONS produces further information on marriage and divorce rates. For age-specific rates, see the latest ONS Series FM2
www.statistics.gov.uk/StatBase/Product.asp?vlnk=581
7. It is possible to adjust durations based on the year-difference method (for divorce or death) to approximate the month-difference method. The distribution of exact durations can be used to transform the events data and correct the inaccuracy. At present, the most appropriate assumption is that events have a symmetric triangular distribution. Further work hopes to explore this and consider, for example, the effects of seasonality upon divorce and death. Using the distribution assumption results in a shift of approximately six months.
8. Most recently, ONS (2007) Marriage divorce and adoption statistics, *Series FM2* no.32
9. It follows that the cumulative total for the month-difference method will be larger at each duration than the cumulative total for the year-difference method, but the cumulative totals will be equivalent after the final duration.
10. Although those with a legally recognised marriage abroad may voluntarily deposit the certificate with the Registrar General, these people are not included in marriage statistics for England and Wales.
11. Stalford H (2004) Regulating cross-national divorce, child contact and residence in the European Union
www.ciimu.org/webs/wellchi/reports/workshop_1/w1_stalford.pdf
12. More specifically, this means the death of the first member of married couples to die. This death affectively ends the marriage in demographic terms, and the surviving partner has a new marital status as a widow or widower.

13. There are differences between recent cohorts for other aspects of divorce behaviour.
14. See the latest ONS Series FM2 – Table 4.3 and 4.4 www.statistics.gov.uk/StatBase/Product.asp?vlnk=581
15. Note that bachelors and spinsters will not all be married to each other. For example, some bachelors will marry divorced or widowed women.
16. Given that this article does not include 2006 divorce data, there is one more year of data before the 1971 cohort has completed 35 years (likewise, there is one more year before the 1976 cohort has completed 30 years etc). The choice of 35 years as a cut-off point was made because there are very few divorces at durations of marriage longer than 35 years.
17. For more information see *Population Trends* 83, see note 4 above
18. The method is a period measure, so it is highly dependent on the level of divorces in the chosen year. It is hoped that further work can be carried out to investigate the effect of combining events for more than one year to create a life table. This may give a more robust current estimate, reducing the impact of recent fluctuations in divorces. This work also hopes to include a cohort life table for divorce. For this article, 2005 events were used to enable direct comparison with previous articles.
19. Marital status estimates are not available by single year of age for ages 90 and over.
20. For ages above 89-years old the estimates are allocated to single years using data for the total population. The problem of data not being available for single years of age over 89 occurs again for data on new widows and new widowers. In this case, deaths data by single year of age were used to allocate the grouped widowhoods (for the same sex). While this is not an ideal solution, it is felt to be a sufficient approximation given the small influence of widowhoods at ages over 89.
20. For example, all married men aged 18 were allocated to all possible years of marriage for their age cohort (1998, 1999, 2000 and 2001) according to the distribution of marriages in these years. An adjustment was made to account for the difference between mid-year and calendar year events.
21. This is largely because divorce is more likely to occur to more recent years of marriage, irrespective of age. On the other hand, variations in deaths are likely to be largely driven by age, as assumed here. There may be an association between duration of marriage and death rates (it is known that marriage confers some health advantages), but no account of this was taken in the analysis due to data constraints.
22. Note: Due to data constraints this adjustment uses divorces between 1963 to mid-2001 only. Divorces prior to 1963 are assumed to be evenly distributed across the years.
23. This calculation is carried out by sex and single year of age. An example for males aged 19 would be: [A] Calculate all previous marriages that have ended in divorce for men who are 19-years-old in 2001, this calculation includes the year in which these marriages occurred; [B] The total of previous marriages that have ended in divorce for men aged 19 in 2001 is distributed **evenly** to all possible years of marriage (in this case 1997, 1998, 1999, 2000); [C] This then gives a population of men aged 19 in 2001 who have ever married, excluding those whose marriages has ended due to death; [D] The same divorces calculated in [A] are removed from the population according to the year of marriage in which they occurred. This then gives the same total, but the distribution now considers the variation in divorce by year of marriage.
24. Deaths to married couples by age are taken from the marital status estimates and used to create age-sex specific death rates. These are then used to calculate death rates by each year of marriage (allocating deaths to years of marriage according to the distribution of married people in each 'age/sex/year of marriage' category).