WHO REMAINS CHILDLESS?

KATHLEEN E. KIERNAN*

Social Statistics Research Unit, City University, London

Summary. Who are the men and women who are childless in their mid-30s? Life history data for a British cohort born in 1946 show that age at marriage and marital breakdown were clearly associated with childlessness. Women who were only children were more likely to be childless than those with siblings. Further, early menarcheal age, being highly qualified and having a high status occupation were indirectly related to childlessness. For men, particularly amongst those who had experienced a broken marriage, it was the most ambitious, the highly educated and those in professional occupations who were relatively more likely to be childless.

Introduction

Since the 1950s, a major focus of fertility research has been on fertility preferences, and on the control of unwanted births (Whelpton, Campbell & Patterson, 1966; Cartwright, 1976; Langford, 1976). There is little information on childless couples and the factors that predispose to negative fertility attitudes in British couples, probably because in the post-war period, as compared with the period prior to the war, childlessness, whether voluntary or involuntary, has been relatively rare. Having children was normal behaviour and a seemingly inevitable consequence of marriage. Childlessness amongst married couples tended to be negatively evaluated. Those who wished to have no children were stigmatized as selfish, whilst those who were unable to have children were pitied. With the substantial increases in the proportion of extra-marital births, particularly since the late 1970s, the link between marriage and childbearing is being increasingly eroded. Nowadays, it is acceptable to ask the question 'are you going to have any children?'. The concept of voluntary childlessness has emerged as a new dimension of fertility research. Such studies, which are typically small in scale, are still rare in Britain (Baum & Cope, 1980) but more common in the USA (e.g. Veevers, 1980; Polonko & Scanzoni (1981).

The extent to which couples are likely to remain childless is an increasingly important element in the projection of the future course of fertility in many developed countries. Currently, there is good evidence that more and more women are remaining childless during the erstwhile prime reproductive years, but whether this is largely due to postponement or to an increase in childlessness remains to be seen. Data from OPCS for England and Wales show that in 1974, 33% of women aged

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*Present address: Family Policy Studies Centre, 231 Baker Street, London.

25–29 and 16% of those aged 30–34 were childless, whilst in 1984 the analogous proportions were 47% and 24% respectively. Birth cohort data also illustrate the extent of the changes. For example, 43% of women born in 1958 were childless at age 27 as compared with 25% of those born in 1946; a 42% increase amongst women born only 12 years apart. Estimates by OPCS indicate that one in ten of the women born during the mid-1940s and around one in five of those born in the late 1950s cohort will be childless at the end of their reproductive years (Werner & Chalk, 1986). Though there is little evidence from attitudinal data to support the general impression that voluntary childlessness is on the increase or becoming more widespread, the proportions of women actually stating that they want no children has changed very little, being around 5–7% (OPCS, 1984, 1985). For example, in the 1983 General Household Survey data (OPCS, 1985) only 5–6% of women born during the periods 1955–59 and 1960–1964 expect to have no children (Werner, 1986). But there was a high non-response rate to this question, of the order of 20% which may distort the estimates.

At face value there seems to be some incompatibility between expectations and reality amongst women who provide an answer to numbers of children expected. More remain childless than expect to do so. Some of those who expect to have a child eventually may change their intentions, either voluntarily or involuntarily: hopes for establishing a union may not be met or divorce precedes the time in which a child was planned. Others may face infertility problems which may or may not have been exacerbated by postponement of childbearing.

As more and more couples delay childbearing the issue of declining reproductive capacity with age needs to be considered. The evidence to date, which largely comes from historical populations, suggests that amongst nulliparous women there is a moderate reduction in reproductive capacity with age until the late 30s when it increases sharply (Menken, 1985; Trussell & Wilson, 1985). How far these findings apply to contemporary populations awaits detailed investigation. However, there is some limited but direct evidence for modern cohorts of women attending New York hospitals (Stein, 1985) that, after age 20 years, advancing maternal age is associated with conception delay, but the relationship becomes steep only at the end of the 30s. There is also evidence that prior use of oral contraceptives tends to prolong the interval to conception (Vessey et al., 1978) and this has been found to be most marked amongst older women (aged 30 and over) with long durations of pill use (Harlap & Davies, 1978).

One of the most consistent findings with respect to childlessness is that its incidence increases with age at first marriage. Data from the 1911 Census, 1946 Family Census and the 1961 and 1971 Censuses show this clearly (Table 1). The relationship holds for women who married in the 1860s, the 1920s and the 1950s. The gap has become more pronounced over time at older ages. Fertility surveys carried out in the United States show the same relationship (Whelpton et al., 1966), as did Kuczynski's study (1938) of childless marriages which surveyed a range of pre-war censuses. This relationship between childlessness and age at marriage is intriguing. It holds even at young ages at marriage, teens versus early 20s, where one might expect the effect of fecundity impairment to be minimal. Admittedly teenage brides are disproportionately selected for fecundability in that a higher proportion of them are

Table 1. Percentage of women childless by date of
marriage and age at marriage

Date of marriage	Age at marriage					
	< 20	20–24	25–29	30–34	35–39	40–44
1861–71*	3·5	5·8	9·8	15·8	29·9	
1871–81	3·2	5·5	10·3	17·1	38·2	
1881–86	3·2	5·5	10·4	16·9	42·8	
1890–99†	4·2	7·0	11·2	18·9	33·6	55·6
1900–09	4·0	6·9	12·8	21·9	38·6	67·5
1926–30‡	4·5	9·9	20·3	33·3	54·9	82·2
1931–35§	4·1	9·8	19·7	34·8	53·3	73·9
1936–40	3·8	8·3	16·6	31·5	53·9	75·4
1941–45	4·6	8·0	15·3	28·3	51·0	75·9
1951–55**	3·3	7·6	15·9	29·1	51·2	74·1

Sources:
  * 1911 Census England and Wales (Glass & Grebenik, 1954).
  † Family Census 1946 Great Britain (Glass & Grebenik, 1954).
  ‡ Family Census 1946 Great Britain (Grebenik, 1983).
  § Census England and Wales (Grebenik, 1983).
  ** 1971 Census England and Wales (Grebenik, 1983).

pregnant at marriage. But this difference in childlessness between the teens and 20s is not so apparent in developing countries. Results from the World Fertility Survey show that the incidence of childlessness amongst women aged 40–49 years was only slightly higher for those who married at ages 21–24 than for those married at ages 17–20 (McDonald, 1984). Among the 21 countries considered, the difference exceeded 1% in only seven countries and 2% in three of the countries. However, the minority of women in developing countries who married at ages above 24 had a higher incidence of childlessness.

Physiological factors alone are unlikely to account for the variation in incidence of childlessness with age at marriage so frequently found in fertility studies in developed countries. It may be that the factors that lead to a delay in marriage are also associated with a decreased inclination to parenthood and a higher incidence of voluntary childlessness. Moreover, physiological factors and number of years of exposure to risk of pregnancy are more likely to have a greater effect on the number of children born than on whether a women has one child or no children. The extent to which biological factors account for differences in the incidence of childlessness with age at marriage and the extent to which social and psychological factors, both in the past and today had and have an effect remain open questions.

To enquire whether there are other characteristics besides age at marriage that distinguish childless men and women from those who become parents, data were

examined from the MRC's National Survey of Health and Development, a longitudinal study of a sample of a cohort born in 1946 (Douglas, 1976, Atkins *et al.*, 1981) who have been followed up from birth into middle-age.

Findings

Childlessness amongst the 1946 cohort

By the time men and women reach their mid-30s the great majority have become parents. The 1946 cohort were last contacted in 1982 when they were age 36. At this age, 81·6% of the men and 88·6% of the women in the sample were parents (Table 2).

Table 2. Percentage of men and women with and without children at age 36, by marital status

	Men		Women	
	%	N	%	N
With children				
Married now or previously	81·3	1570	88·2	1698
Never married	0·3	6	0·4	7
Childless				
Married now or previously	9·8	189	6·9	133
Never married	8·5	165	4·5	86
Total	100·0	1930	100·0	1924
Total % childless	18·7		11·8	

Substantial proportions of the childless had never married: one in two of the men and two in five of the women. Amongst this generation marriage was the normative setting for having children. It is only during the 1980s that having children outside marriage has shown a noticeable increase (Kiernan, 1989). Here, our primary concern is with the sub-group of the ever-married men and women who had not become parents. These men and women have been married for varying lengths of time which obviously will affect the probability of their being childless. Those who have been married longer, other things being equal, are less likely to be childless. Table 3 shows that only 1·7% of women who married in their teens had not had a child by age 36 as compared with 22% of those who had married at ages 27–30 years, and just over 2% of the men who had married at ages under 22 had not become fathers as compared with 24% of those who married at ages 27–30. Overall, 7% of the women who had married and nearly 11% of men who had married had not had a child by age 36. To isolate the characteristics that differentiate the childless and those who became parents, this analysis concentrates on the groups of men and women who were

Table 3. Percentage childless by age at marriage

Age at marriage	Men %	Men N	Women %	Women N
16–19	2·2	500	1·7	472
20–21			4·6	560
22–23	7·0	517	7·8	422
24–26	10·3	485	11·8	238
27–30	24·0	179	22·1	104
31–33	59·3	59	25·0	20
34–36	73·7	19	66·7	15
Total	10·7	1759	7·3	1831

married before age 27, who had had at a minimum nearly 10 years of marriage. It is well documented that the great majority of couples have embarked on parenthood within 10 years of marriage (Grebenik, 1983).

Of those who had married at age 26 or younger only a minority were in fact childless; 5·6% of the women and 6·5% of the men. These small groups of men and women include the involuntarily and voluntarily childless, as well as postponers and the undecided who may have children in their late 30s. Unfortunately there is no means of distinguishing the relative proportions falling into these groups as no direct information on reasons for childlessness has been collected to date.

Characteristics of the childless

From the wide range of background information available for the survey members only a few characteristics distinguished the childless from the fertile. These characteristics are shown in Tables 4 and 5 for women and men separately.

Considering the women first, the only family-of-origin characteristic that distinguished childless women from mothers was number of siblings. Women who were only children were more likely to be childless (11%) than women who had siblings (5%). Amongst women with siblings the incidence of childlessness did not vary with number of siblings. Biological factors also seemed to be associated with childlessness, in that women whose menarche occurred before age 13 were more likely to be childless than those whose menarcheal age was 13 or older. However, further analysis showed that the association between menarcheal age and childlessness was not a direct one; the association operated through family size. Girls who were only children were more likely to have had early menarche (61%) than those who had siblings (41%). Why girls who are only children are more likely to have early onset of menses is still unresolved, 20 years since it was first documented (Douglas, 1966).

Socioeconomic differences between women with and without children were also found. For example, highly qualified women, those with qualifications beyond A-level, were more likely to be childless than those with lower level or no qualifications, and women whose last or current full-time job at age 26 was classified as a

Table 4. Percentage of women childless at age 36 by background characteristics: ever-married women, married at ages 16–26

Characteristics		%	N
Age at marriage			
16–19		1·7	472
20–21		4·6	560
22–23		7·8	422
24–26		11·8	238
		$P < 0.0001$	
Family size			
Only child		11·3	212
Siblings		5·0	1295
		$P < 0.0006$	
Age at menarche (years)			
≤ 12		7·6	594
13 +		4·9	790
		$P = 0.05$	
Highest qualifications			
None		4·1	584
O-level or equivalent*		5·7	616
A-level or equivalent		5·9	220
Advanced non-degree		8·9	157
Degree		11·1	63
		$P = 0.05$	
Social group of last full-time job at age 26			
Professional	I	19·0	21
Intermediate	II	9·0	300
Non-manual	IIINM	5·4	830
Manual	IIIM	5·0	161
Semi-skilled	IV	5·6	218
Unskilled	V	0·0	27
		$P = 0.01$	
Marital breakdown			
Marriage intact		5·4	1139
Marriage broken		12·4	275
		$P < 0.0001$	

* Includes sub-O-level qualifications.

professional or intermediate occupation were more likely to be childless than those in other non-manual or manual occupations.

Demographic differences between childless and fertile women were also important. Besides women who married at older ages, women who had experienced a broken marriage by age 36 were also more likely to be childless (12%) than those in intact marriages (5%).

For the men, Table 5 shows that greater proportions of childless men were to be found amongst those who left full-time education at age 18 or later, who had high ambition scores at age 15 and who were in professional occupations. The small group

Table 5. Percentage of men childless at age 36 by background characteristics: ever-married men, married at ages 16–26

Characteristics		%	N
Age at marriage			
16–21		2·2	500
22–23		7·0	517
24–26		10·3	485
		$P < 0.0001$	
Level of ambition at age 15			
Low		6·0	453
Medium		5·7	402
High		9·7	412
		$P = 0.04$	
Age left full-time education (years)			
15		5·4	778
16		5·8	276
17		5·4	130
18		11·8	76
19+		10·2	210
		$P = 0.03$	
Social class at age 36			
Professional	I	1·1	117
Intermediate	II	8·0	415
Non-manual	IIINM	5·3	131
Manual	IIIM	8·0	374
Semi-skilled	IV	5·4	112
Unskilled	V	26·7	15
		$P = 0.05$	
Marital breakdown			
Marriage intact		7·0	1021
Marriage broken		12·0	209
		$P = 0.02$	

of men who were in unskilled jobs at age 36 were also more likely to be childless than other men. Age at marriage and marital breakdown were also important factors, with those marrying later or having experienced a broken marriage being more likely to be childless.

Men and women who had experienced a broken marriage, as well as being more likely to be childless, form a significant minority of the total childless, 38% in the case of the women and 25 per cent in the case of the men. Differential exposure to pregnancy probably accounts for some of this difference.

Do the factors that distinguish between the childless and fertile in intact marriages

Table 6. Percentage of women childless at age 36 by status of marriage and background characteristics: ever-married women, married at ages 16–26

Characteristics		Marriage intact		Marriage broken	
		%	N	%	N
Age at marriage					
16–19		1·2	257	4·5	111
20–21		4·7	386	10·5	80
22–23		6·3	303	23·7	59
24–26		10·9	193	28·0	25
		$P < 0.0001$		$P < 0.001$	
Family size					
Only child		11·3	142	22·2	36
Siblings		4·8	876	11·2	206
		$P < 0.004$		$P = 0.11$	
Highest qualification					
None		4·9	368	5·8	104
O-level or equivalent*		4·5	397	15·7	108
A-level or equivalent		5·3	170	15·4	26
Advanced non-degree		9·4	127	12·5	16
Degree		8·5	47	42·9	7
		$P = 0.23$		$P = 0.02$	
Social group of last full-time job at age 26					
Professional	I	12·5	16	22·5	38
Intermediate	II	8·7	231		
Non-manual	IIINM	4·7	576	13·3	135
Manual	IIIM	2·9	103	17·9	28
Semi-skilled	IV	6·1	131	4·2	48
Unskilled	V	0·0	17	0·0	5
		$P = 0.11$		$P = 0.08$	

* Includes sub-O-level qualifications.

also distinguish between the childless and fertile in broken marriages? Further sub-division of the numerically small group of childless men and women presents difficulties for sound statistical interpretation, but the data in Tables 6 and 7 seem to suggest that the association between some background factors and childlessness differ between the two groups, particularly amongst the men.

Table 6 shows that the relationship between childlessness and age at marriage holds, as does the greater propensity to childlessness amongst women who were only children, although it was not statistically significant for the broken-marriage group. The association between being highly qualified and being childless is somewhat weaker in the intact group than was observed for childless women in general, and amongst the broken-marriage group, it is only women at the extremes of the

Table 7. Percentage of men childless at age 36 by status of marriage and background characteristics: ever married men, married at ages 16–26

Characteristics	Marriage intact		Marriage broken	
	%	N	%	N
Age at marriage				
16–21	1·4	276	6·3	96
22–23	8·2	364	8·8	68
24–26	9·7	381	28·9	45
	$P < 0.0001$		$P < 0.0005$	
Level of ambition at age 15				
Low	7·5	305	7·4	54
Medium	7·6	263	5·1	59
High	7·9	304	28·1	57
	$P = 0.98$		$P < 0.005$	
Age left full-time education (years)				
15	6·9	478	7·2	125
16	4·9	205	20·7	29
17	5·2	97	5·6	18
18	6·9	58	33·3	15
19+	11·0	163	20·0	20
	$P = 0.19$		$P = 0.01$	
Social class at age 36				
Professional I	7·8	102	33·3	15
Intermediate II	7·1	354	13·3	60
Non-manual IIINM	4·4	113	11·8	17
Manual IIIM	7·5	307	9·4	64
Semi-skilled IV	4·5	88	9·1	22
Unskilled V	15·4	13	100·0	2
	$P = 0.60$		$P < 0.003$	

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qualification distribution that are more or less likely to be childless. With regard to occupational status, proportionately more women in higher status jobs are childless, but beyond these groups there is little evidence of a linear relationship between occupational status and childlessness in either of the two marital status categories.

For men, Table 7 shows that subdivision according to their marital history removes the previously observed linear relationship between age at marriage and the probability of being childless. Men in intact marriages who married above age 21 have similar probabilities of being childless and only the latest marrying men in the broken-marriage group have a greater probability of being childless, a probability that is substantially greater than that for men who married at younger ages. Amongst the men who have experienced a broken marriage it is clear that it is the highly ambitious, the highly educated, and those in the professional occupations who are most likely to be childless. This is not the case amongst the men in intact marriages. Similar proportions of men in professional and intermediate occupations are childless, and highly ambitious men are as likely to be childless as those who had average or low ambition scores. But there is still some evidence that proportionately more of the very highly educated men, those who left full-time education at age 19 or later, are childless.

Table 8. Childlessness at age 36: a multiple classification analysis†

	Intact marriage		Broken marriage	
	Overall effect eta	Direct effect beta	Overall effect eta	Direct effect beta
Variables				
Men				
Age at marriage	0·14	0·14	0·30	0·23*
Level of ambition	0·01	0·03	0·30	0·20*
Terminal age of education	0·06	0·06	0·18	0·06
Occupational status	0·06	0·07	0·20	0·12
Grand mean	0·08		0·15	
R² (%)	2·6		16·4	
Women				
Age at marriage	0·14	0·12*	0·29	0·23*
Family size	0·10	0·09*	0·11	0·07
Educational attainment	0·07	0·01	0·18	0·04
Occupational status	0·07	0·02	0·20	0·11
Grand mean	0·06		0·13	
R² (%)	2·9		10·0	

* Statistically significant at 0·05 or less.
† For men and women married at ages 26 or younger who were in an intact marriage or had experienced a broken marriage by age 36.

Multivariate analyses generally confirmed what was observed from the bivariate analyses. Table 8 shows that, amongst the women who were still in intact marriages at 36 (who had married at age 26 or younger), the only factors that were directly associated with the probability of being childless were late age at marriage and being an only child. The socioeconomic factors, educational qualifications and high occupational status, did not have a direct bearing on the probability of being childless once age at marriage and family size had been taken into account. However, highly educated women who marry before age 26 may be a less select group than the minority who marry at older ages. For example, those who marry at younger ages may be less career orientated than those who marry at later ages. Table 8 also shows the saliency of age at marriage and level of ambition on the probability of being childless amongst men who had experienced a broken marriage.

Discussion

The data used in this analysis were not ideal for a study of childlessness; the analysis has provided some clues but it has also raised questions that require answers.

Why girls who were only children were more likely to be childless is intriguing. Relevant factors would be whether cohort members were involuntarily or voluntarily childless, or whether they ever had a pregnancy, as opposed to a live birth, or why their mothers had had only one child. Perhaps it is related to a family history of obstetric and gynaecological difficulties. Or perhaps it is related to the fact that they are more likely to have had early menarche, for ɪ
reproductive capacity in some way as yet unidentified (
may possibly have more negative attitudes to childbearing and therefore be less predisposed to having children.

Amongst both men and women in intact marriages, age at marriage was the most important factor, amongst the few that could be identified, that was related to the probability of being childless at age 36. Exposure time is unlikely to be the explanation for these differences as all had been married for some 10 years or more. This suggests that social and psychological factors that promote later marriage may be part of the same set that promote more negative attitudes to childbearing.

If, as is forecast, childlessness becomes more common, it is likely to receive more attention than it has done in the past. The levels of childlessness in the 1940s cohorts may well be among the lowest of cohorts born this century. Already there are changes under way that would suggest that its incidence may increase in later born cohorts. These younger cohorts are more likely to postpone childbearing, to have commenced sexual activity at younger ages, and to have had more sexual partners. As a consequence they are more likely to have fallen victim to sexually transmitted diseases, e.g. pelvic inflammatory disease which now is much more common and is associated with infertility (Westrom, 1975). Set against this are the advances in biotechnology and medicine that have made it possible for infertile couples to have children. Increases in divorce and the changing role of women, particularly in the labour market, may also lead to an increase in childlessness. But whether, as projected, the level of childlessness attains 20%, a level not uncommon amongst women born at the beginning of this century, remains to be seen.

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