

RECENT DECLINE IN AUSTRALIAN FERTILITY

L. T. Ruzicka* and C. Y. Choi**

Introduction

In the history of European settlement in Australia, one major concern to governments and the public has been the size and growth of the population. In the sparsely populated continent rich in natural resources, a healthy growth of the population has been considered essential to the economic and social well-being of the country. Large scale immigration has been actively promoted and sustained since the colonial days, and on many occasions when the birthrate declined, official concern has been expressed.

As early as in 1904, the New South Wales Government set up a Royal Commission to investigate the causes of the decline of the birthrate since the 1880s;¹ and in 1942, having experienced the low fertility periods of the Depression of the 1930s, the Commonwealth Government established a Committee of Inquiry into the declining birthrate and supported research into its causes by the National Health and Medical Research Council.²

In 1970, the Commonwealth Government commissioned a National Population Inquiry, and the First Report of the Inquiry in 1975 (popularly known as the 'Borrie Report' after its Chairman) strongly suggested that fertility, after the decline in the mid 1960s, would not return to its high levels of the 1950s. The Report adopted in its population projections fertility levels corresponding to a net reproduction rate of unity (replacement level) from 1975-76 as its 'preferred' fertility assumption.³

Since the publication of the Borrie Report, Australia's fertility has further declined. In 1976, it had fallen below long term population replacement level and the net reproduction rate declined further to 0.937 in 1978. In 1979, the preliminary estimate of the number of registered births was 223,100, yielding a birthrate of 15.0 per 1,000 population.⁴ This is the lowest ever recorded in Australia's history.

This article attempts to describe the demographic forces which bear on the current level of fertility and to isolate the contribution to the recent decline in terms of changes in reproductive patterns, marriages and the timing of births.

Number of births and the birthrate

In 1971, the Australian Bureau of Statistics reported 276,362 registered births, this being the highest number of births recorded in Australia. Since then, the annual number of registered births has been continuously declining. By 1979, it had dropped by almost one-fifth to 223,100. In relation to population size, that is in terms of the crude birth rate, the post World War II peak was reached in 1947 with 24.1 births per thousand population. Subsequently, the rates fluctuated at a comparatively high level and within a narrow range between 22.4 (in 1960) and 23.3 (in 1950 and 1952).⁵ Thereafter, they dropped below 20 in 1965-67, briefly recovered to 21.6 in 1971, only to set on a steeply declining trend plunging eventually to 15.0 per 1,000 population in 1979.

TABLE 1. BIRTHS AND BIRTHRATES

Year	Births	Crude birthrate	General fertility rate per 1,000 women age 15-44
1961	239,986	22.8	101.4
1966	223,731	19.3	94.2
1971	276,362	21.6	102.3
1972	264,969	20.4	96.0
1973	247,670	18.5	87.9
1974	245,177	18.0	84.9
1975	233,012	16.9	79.1
1976	227,810	16.4	75.8
1977	226,291	16.1	73.7
1978	224,181	15.7	71.4
1979	223,100	15.0	69.6

* Professorial Fellow in Demography, Australian National University.

** Director of Demography, Australian Bureau of Statistics.

Neither the number of births nor the crude birthrate are indices suitable for revealing the complicated network of forces which operate on fertility change. Considering only demographic determinants of fertility and leaving aside social and economic factors, it is obvious that the annual number of births is dependent on the number of women capable of childbearing (i.e. women of childbearing ages), their past and current fertility behaviour, the timing of their births and how this timing is influenced by changes in marriages and the spacing of children. These contributing factors will be analysed below.

Between 1961 and 1978, the number of women in each of the five year age groups between ages 15 to 44 increased; hence the decline of the number of births reflects a considerable decline in fertility of women of child bearing ages which more than compensated for the increase in the number of these women. The general fertility rate of women aged 15-44 shows a decline of 31 per cent between 1961 and 1979 reaching a low level of 69.6 per 1,000 in 1979.

The decline in fertility was somewhat less between the ages 15 to 34 years but very steep after age 34. By 1978, the summary measure, the total fertility rate, was reduced to 56 per cent of its 1961 value (Table 2). Even at the prime childbearing ages of 25 to 29 years, the 1978 rate was only 66 per cent of the 1961 rate. The decline in fertility at ages above 30 has meant that an increasing proportion of births now occur to women of ages below 30 years, 77 per cent in 1978 compared with 68 per cent in 1961.

TABLE 2. AGE SPECIFIC AND TOTAL FERTILITY RATES^(a), 1961-1978

Year	Age specific birth rates							Total fertility rate
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
1961	47.4	225.8	221.2	131.1	63.4	19.2	1.4	3,547
1966	48.9	173.1	183.9	105.1	50.6	14.2	1.0	2,884
1971	55.2	180.9	195.4	102.3	44.9	11.4	0.8	2,954
1972	54.5	168.7	181.6	94.0	38.9	10.0	0.7	2,742
1973	47.9	151.3	164.9	82.7	32.9	8.5	0.6	2,443
1974	44.4	146.1	161.4	79.3	29.5	7.3	0.5	2,341
1975	40.4	134.4	151.0	75.0	26.4	6.2	0.4	2,168
1976	35.6	129.2	147.3	73.1	24.3	5.6	0.4	2,077
1977	32.6	123.1	147.2	74.8	24.0	5.0	0.3	2,035
1978	30.4	116.9	145.9	74.2	23.6	4.5	0.2	1,979
	Index: 1961 = 100							
1971	116	80	88	78	71	59	57	83
1976	75	57	67	56	38	29	29	59
1978	64	52	66	57	37	23	14	56

(a) The total fertility rate is the sum of the age-specific birth rates multiplied by 5. It represents the number of children that would be born to 1,000 women who experienced throughout their childbearing lives the age-specific birth rates for the year shown.

Fertility rates of a given year, say 1978, represent the experience of a wide range of generations of women. Those aged 45-49 years in 1978 were born in 1928-33, married probably in the late 1940s and early 1950s, accomplished a large part of their family formation in the late 1950s and early 1960s and contributed little to the fertility of the 1970s. Women aged 30-34 years in 1978 were born in 1943-48, married probably in the mid and late 1960s and contributed to the fertility of the late 1960s and the 1970s. Their reproductive life in 1978 was not yet at an end, but by past experience very close to it. The fertility of a particular year or sequence of years (we shall call this time-period fertility) needs to be understood in terms of the contribution from the different generations of women.

Generational fertility

As the term implies, generational fertility is the cumulative lifetime fertility of a cohort (generation) of women born in the same year or years.

If we read the age-specific fertility rates in Table 3 along the diagonal from the upper left to the lower right hand corner and sum them up, we obtain the cumulative fertility of the generation, that is, the average number of children born by 1,000 women of a given generation. For those born around 1928-33, i.e. aged 45-49 in 1976-1978, the cumulative fertility is 3,077 per 1,000 women reaching the end of their reproductive life span. Those born in 1943-48, in contrast, have given birth to 2,318 children per 1,000 women so far, and are likely to end their reproductive life with between 2,450 and 2,500 when they reach the ages of 45-49 years in the early 1990s.

TABLE 3. PERIOD AND GENERATIONAL FERTILITY RATES

<i>Period</i>	15-19	20-24	25-29	30-34	35-39	40-44	45-49	<i>Period TFR(a)</i>
1931-35	25.6	101.8	124.1	96.8	61.6	24.8	2.6	2,186
1936-40	24.2	108.4	131.9	98.3	57.6	20.1	2.0	2,213
1941-45	23.8	126.9	152.8	114.3	66.3	21.1	1.7	2,535
1946-50	33.0	164.2	183.3	126.6	72.3	22.7	1.8	3,020
1951-55	39.5	192.8	193.0	123.5	65.0	20.5	1.5	3,180
1956-60	44.2	216.4	211.5	126.1	63.9	19.0	1.4	3,412
1961-65	46.5	204.0	207.2	122.4	59.2	17.5	1.2	3,289
1966-70	49.3	172.6	187.6	103.0	46.8	12.9	1.0	2,867
1971-75	48.0	154.8	170.6	85.7	34.3	8.6	0.6	2,514
1976-78	32.9	123.1	146.8	74.0	24.0	5.0	0.3	2,030

<i>Generation born in(b)</i>	1913-18	1918-23	1923-28	1928-33	1933-38	1938-43	1943-48	1948-53
<i>Generational TFR(a)</i>	2,493	2,701	2,899	3,077	(c)3,028	(c)2,754	(c)2,465	(c)2,271
Index: 1918-23 = 100	92	100	107	114	112	102	91	84

(a) TFR=Total Fertility Rate. (b) Approximation only. A large proportion of those aged 15-19 in the period 1936-40 and aged 20-24 in 1941-45 etc were born in 1918-23. (c) The incomplete reproductive experience of these generations was extrapolated by assuming that the age specific fertility rates would remain at the level recorded in 1976-78. (This assumption implies that for the generation born in 1948-53 age-specific fertility rates of 1976-78 would apply for ages 30-49 years.)

The pattern of age specific fertility in any given year thus reflects the various stages in reproductive life of generations born in a span of about 30-35 years; some of them are yet to be married and to start a family, and others are close to the end of their biological capability of having children. More importantly, the span of 30-35 years between the youngest and the oldest women represents a wide range of experiences, attitudes and aspirations which are influenced by the social and economic environment at various stages of their life cycle. Thus, for instance, the low fertility rates of women born in 1913-18 may have been affected by the separation of wives and husbands during the War at a time when they reached the prime reproductive ages of 20-29 years. Some compensation for deferment of births may have been the cause of the increased fertility in the late 1940s when this generation reached age 30-34.

Comparing fertility at various ages between generations of women shows that each subsequent generation achieved a higher proportion of their completed fertility before the age of 30 years and a lower proportion after the age of 30 years. (see Table 4 below). The generation born in 1918-23 had 62 per cent of their children before they turned 30 years of age; between 30 and 40 years of age, they added 34 per cent of their completed fertility, and 4 per cent were born to these women after the age of 40 years. In contrast, women of the generation born in 1938-43 achieved almost 80 per cent of their estimated total number of children before 30 years of age, adding only 20 per cent between the ages 30 to 40 years. (This generation, who were aged 35-40 in 1978 had not yet completed their child bearing ages; their completed fertility of 2,754 per 1,000 has been estimated by extrapolation).

TABLE 4. CUMULATIVE GENERATIONAL FERTILITY

<i>Generation born in</i>	<i>Cumulative fertility (per 1,000 women) at age</i>			<i>Per cent of total TFR</i>	
	30	40	50	30	30-40
1913-18	1,434	2,392	2,493	58	38
1918-23	1,672	2,609	2,701	62	34
1923-28	1,905	2,831	2,899	66	32
1928-33	2,186	3,032	3,077	71	27
1933-38	2,315	3,002	3,028	76	23
1938-43	2,179	2,727	2,754	79	20
1943-48	1,948	2,438	2,465	79	20

Source: Derived from Table 3.

The shift of childbearing towards younger ages was partly responsible for the very high levels of fertility in the 1950–65 period. While fertility of those aged 30 and over remained still comparatively high in this period (over 120 per 1,000 women aged 30–34) reflecting the late completion of childbearing of the older generations, the younger generations had started their families early and attained high fertility while they were still in their 'twenties'. The joint effect of these two generational patterns of childbearing gave rise to a very high level of fertility and contributed to the 'baby boom' of this period.

It is worth noting that the high fertility level of the 1950–65 period does not mean that there had been a sudden increase in the family size of the generations of women who passed through their childbearing ages in those years. None of these generations ever reached the completed fertility suggested by the time-period rates (total fertility rates) for these years. The highest generational fertility of 3,077 children per 1,000 women born in 1928–33 was considerably less than the total fertility rates of the 1951–65 period. The change in the timing of childbearing of successive generations of women had gradually concentrated more of their births into a shorter span of years, creating a sharp increase in time period fertility, particularly in 1956–60.

Changes in fertility pattern and the timing of births in generations can also have a converse effect on time period fertility. While the new younger childbearing pattern is being established, the time period fertility will for some time fall below the cumulative generational fertility levels that the relevant generations will actually achieve. This may be exemplified by the comparison between the low total fertility rate of the 1976–78 period and the relatively higher generational fertility anticipated for the women born in 1948–53.

In general therefore, even if generational fertility remains unchanged, a shift to childbearing at younger age has the tendency to raise the time period fertility level in the short term. Conversely, postponement of childbearing has the opposite effect. The 'baby boom' of the late 1950s and the sustained high number of births throughout the 1960s were partly due to earlier childbearing of the younger generations and the late childbearing of the older generations of the period. This creates a misleading impression of a strong swing towards larger family size which did not exist. The 1951–65 time period fertility rates were not a reliable guide to the understanding of reproductive pattern and levels of the generations which passed through this period.

Similarly the rapid decline in fertility in the 1970s reflects not only the reduction in generational fertility but also the effects of the low fertility of the older women who had completed much of their family formation in the 1960s and the low fertility of the younger women who had postponed their childbearing. In other words, changes in fertility in the 1970s comprise three elements:

- (i) the effect of the stabilisation of the pattern of marriage and childbearing established in the preceding years,
- (ii) the effect of a de-stabilising of those patterns through the delay of marriage and the postponement of the first birth by the younger generations, and
- (iii) a long term trend towards reduction of higher order births and the concentration of the distribution at second and third births.⁶

The most recent generations of women for whom we can approximately predict cumulative fertility are those born in 1948–53 (reaching age 30 in 1978–83). They are likely to end their childbearing with about 2,400 to 2,500 births per 1,000 women, 25 per cent below that of the 1928–33 generation (see Table 3 page 116).

Total fertility is primarily a function of proportions married and fertility within marriage. In a situation where fertility is low and where a completed family size of 2 or 3 can be achieved either early or late in the childbearing age span, the time period fertility level is dependent to a large extent on the age pattern and the timing of births; and this in turn is influenced by changes in marriage patterns and age at marriage. The following section discusses these changes as they affected the recent fertility decline.

Marriage and marital fertility

In 1976, 28 per cent of women aged 15–49 years were unmarried. Most of them were young single women; divorced and separated represented 6–7 per cent of women aged 25 years and over and widows reached almost 5 per cent among those aged 45–49 years. Almost all Australian women were married before they reached the age 30–34 years; in 1976 only 7 per cent of women of this age were never married.

The age pattern of marriages changed over time and, in particular, during the 1950s and 1960s. The median age at first marriage has been steadily declining for both brides and grooms. In 1946–50 it was 22.4 years for brides; by 1961–65 it had dropped to 21.3 years and continued falling so that in 1974 it stood at 20.9 years. Since then the age of brides at first marriage has been rising again and the median reached 21.6 years in 1978.

If we look at the changes in marriage patterns from the generational rather than the time-period perspective, a similar picture emerges. The generation born in 1915 had a median age of brides at first marriage of 24.3 years, those born in 1918 had 23.5 years, and each subsequent cohort reached the proportion of 50 per cent ever married at an earlier age. Those born in 1951 and 1952 displayed the earlier median age at marriages of 21.3 years. Since then the postponement of first marriages caused the median to rise again—up to 22.6 years for the 1957 birth cohort (see Table 5 and Plate 29 below).⁷

NUPTIAL BIRTHS (FIRST CONFINEMENTS) PER 100 BRIDES AGED LESS THAN 45 YEARS BY YEAR OF MARRIAGE, DURATION 0-7 MONTHS AND 8-11 MONTHS

Per 100 brides

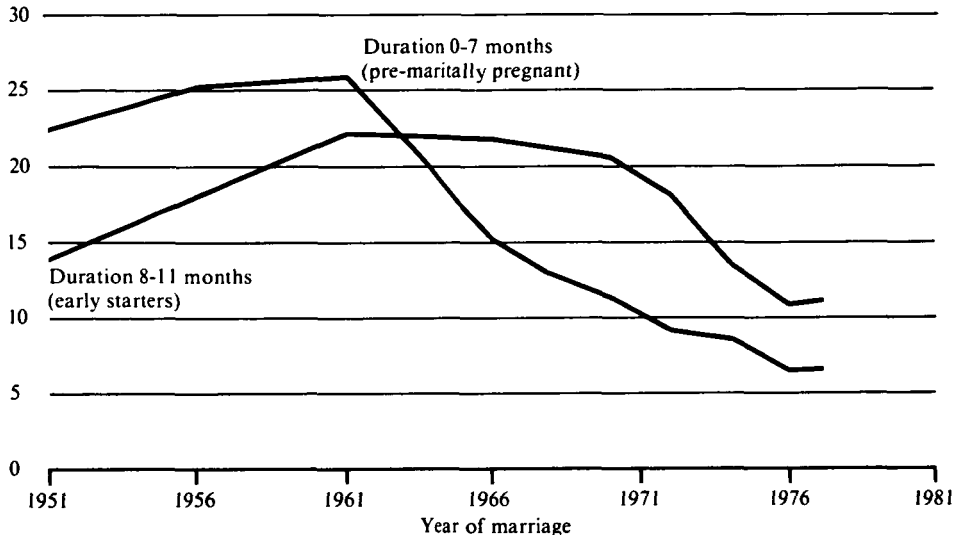


PLATE 29

TABLE 5. MEDIAN AGE AT FIRST MARRIAGE OF WOMEN

<i>Year of marriage</i>	<i>Median age (years)</i>	<i>Generations born in</i>	<i>Median age (years)</i>
1936-40	23.7	1915	24.3
1941-45	22.9	1920	22.8
1946-50	22.4	1925	22.5
1951-55	22.1	1930	21.9
1956-60	21.6	1935	21.5
1961-65	21.3	1940	21.4
1966-70	21.0	1945	21.6
1971-75	21.0	1950	21.4
1976	21.2	1955	21.6
1977	21.4	1956	21.9
1978	21.6	1957	22.6

The rising proportions of married women at younger ages until the recent years had resulted in extended periods of exposure to marital fertility. The women born in 1918 had spent, between aged 16 and 25 years, on average 2.8 years or 28 per cent of that life span in marriage.

TABLE 6. PROPORTION OF TIME SPENT AS MARRIED BETWEEN AGE 16 AND A GIVEN AGE. GENERATIONS BORN IN 1918 TO 1958

Generation born in	Percentage of time between age 16 and given age spent as married (b)				
	20	25	30	35	40
1918	7.4	28.1	45.0	55.3	61.9
1925	9.6	32.5	49.3	59.3	65.5
1930	11.7	38.1	54.5	63.7	69.2
1935	14.0	41.5	57.1	65.8	70.8
1940	15.3	42.4	57.9	66.2	..
1945	14.8	42.4	57.5	..	..
1950	16.5	43.9	..	..	..
1953	16.8	41.5	..	..	..
1958	13.0	..	..	..	..

(a) Proportion (percentage) of time spent as married between age 16 and given age is estimated as follows:

$$T_m^x = \left(100 \sum_{16}^x \frac{M_a}{W_a} \right) / (x-15)$$

Where: M_a is the number of currently married women aged (a) of a particular generation, and W_a is the number of all women aged (a) of the same generation.

(b) Because currently married women are used in the estimation, the result allows for the effects of marriage dissolution (by divorce or widowhood), but not for the effect of mortality of the women themselves.

The 1950 generation was exposed to marital childbearing for almost twice as long as the 1918 generation, namely 4.4 years or 43.9 per cent of its life span between those ages. The recent decline in first marriage rates at ages under 20 years is reflected in the figures for the 1958 generation in Table 6. Between the ages of 16 and 20 years the proportion of time spent in marriage dropped to 13 per cent for the generation born in 1958 (in contrast to 16.8 per cent recorded by the generation born in 1953).

Changes in the length of time in marriage have important effects on the completed fertility of the women. Pregnancies before marriage, in turn, affect the propensity to marry and age at marriage. To isolate the interrelatedness of marriage and fertility, we need to examine the fertility experience of marriage cohorts. Marriage cohorts are aggregates of persons married in the same year or period of time.

The study of fertility of marriage cohorts poses several problems in Australia where overseas migration is an important element of population growth. The original number of marriages of a given year, which forms the denominator for the calculation of marriage-duration specific fertility rates, is likely to be depleted in time by divorce and widowhood, and to a negligible extent, by death of wives. In addition some couples may leave the country after marriage, others married overseas may arrive and have their children in Australia. The number of registered births by marriage duration will thus become less related to the original size of the marriage cohort as marriage durations increase. To reduce this error in the estimation of marital fertility rates, we calculated in Table 7 such rates only for durations of up to 10 years. Even then, the changes in the measure of fertility at durations 5-9 years should be interpreted with caution.⁵

TABLE 7. PATTERN OF CHILDBEARING OF SELECTED MARRIAGE COHORTS: MARRIAGES FOR THE YEARS 1951-1973

Characteristics	Year of marriage							
	1951	1956	1961	1966	1968	1970	1972	1973
1. Number of brides(a)	73,718	68,032	72,727	91,718	101,766	111,211	109,007	107,563
2. Pregnant at the time of marriage(b)	10,253	12,222	16,037	19,887	21,450	22,767	19,667	16,805
3. First birth conceived after marriage and delivered within the first year of marriage	14,193	14,052	14,639	10,834	10,327	9,898	8,174	7,748
Percentage: pre-maritally pregnant	13.9	18.0	22.1	21.7	21.1	20.5	18.0	15.6

TABLE 7. PATTERN OF CHILDBEARING OF SELECTED MARRIAGE COHORTS: MARRIAGES FOR THE YEARS 1951-1973—*continued*

Characteristics	Year of marriage							
	1951	1956	1961	1966	1968	1970	1972	1973
Per cent of brides whose first child was conceived after marriage and born within the first year of marriage(c)	22.4	25.2	25.8	15.1	12.9	11.2	9.1	8.5
Births (cumulative) by marriage duration 10 years:								
birth order: 1	63,763	63,971	68,542	84,313	92,441	..	..	..
2	52,831	53,238	57,279	71,623	77,252	..	..	..
3	32,070	34,238	33,203	33,092	32,386	..	..	..
4	14,455	15,439	12,630	9,064	7,916	..	..	..
Births per 1,000 marriages by marriage duration 10 years:								
birth order: 1	865	940	942	919	908	..	..	..
2	717	782	788	781	759	..	..	..
3	435	503	456	361	318	..	..	..
4	196	227	174	99	78	..	..	..
Parity progression ratios within 10 years of marriage(d)								
M-1	.86	.94	.94	.93	.91	..	..	..
1-2	.83	.83	.84	.85	.84	..	..	..
2-3	.61	.64	.58	.46	.42	..	..	..
3-4	.45	.45	.38	.27	.24	..	..	..
Births (cumulative) by marriage duration 5 years:								
birth order: 1	59,197	59,542	64,144	77,538	84,505	88,997	81,681	77,479
2	37,754	39,995	42,548	47,683	50,719	50,884	44,660	41,491
3	10,743	13,741	11,929	10,326	9,617	7,849	6,330	5,912
Births per 1,000 marriages by marriage duration 5 years:								
birth order: 1	803	875	882	845	830	800	749	720
2	512	588	585	520	498	458	410	386
3	146	202	164	113	94	71	58	55
Parity progression ratios within 5 years of marriage(d)								
M-1	.80	.88	.88	.84	.83	.80	.75	.72
1-2	.64	.67	.66	.62	.60	.57	.55	.54
2-3	.28	.34	.28	.22	.19	.15	.14	.14

(a) Brides aged less than 45 years;

(b) Estimated as the first nuptial confinements within marriage duration 0-7 months;

(c) (3) ÷ (1) - (2)

(d) Probability that within the given marriage duration a woman of parity N will have a child of parity (N + 1); parity progression ratios M-1 give the probability of having a first birth within the given marriage duration; 1-2 are probabilities of women with one previous live birth having the second live birth; 2-3 are probabilities of women with two previous live births having the third live birth.

The discussion of the data in Table 7 may be subdivided for convenience into three sections: pre-marital pregnancies, childbearing early in marriage, and spacing of births and limitation of family size.

(i) Pre-marital pregnancies.

Of the brides marrying in any given year, a certain proportion is pregnant. This proportion is generally highest among the very young brides and steeply declines with increasing age at marriage.

TABLE 8. PERCENTAGE OF PREGNANT BRIDES (a) BY YEAR OF MARRIAGE

Age at marriage	Year of marriage								Per cent decline from 1960-64
	1960-64	1965-69	1970-71	1972	1973	1974	1975	1976	
16 or less	(b) 64	(b) 64	(b) 63	58	54	48	48	48	-25
17	59	60	57	51	48	43	38	39	-28
18	45	43	39	34	27	22	19	18	-60
19	30	28	25	21	17	14	12	12	-60
20	22	20	17	14	12	10	9	9	-59
21	13	12	11	10	9	8	7	7	-46
22	13	11	11	10	9	8	7	7	-46
23	12	11	10	10	9	8	8	7	-42
24	12	10	10	9	9	8	8	8	-33
25	10	10	10	9	9	8	8	9	-10

(a) Pregnant brides are defined as those who delivered their first child within marriage durations zero to seven completed months.

(b) Age at marriage 16 years.

Among the brides marrying in the 1960s the proportion pregnant reached 64 per cent of those aged 16 years and between 10 and 13 per cent among those aged 21 years and older. In the early 1970s the percentage of pregnant brides declined at all ages but in particular among those aged 18-20 years.⁹ Presumably, the contraceptive revolution of the 1960s and, in the 1970s, easier access to legal interruption of unwanted pregnancies reduced the number of marriages that were earlier prompted by such pregnancies.¹⁰

It may be conjectured with some justification that a part of the decline in the marriage rates at ages under 20 years in the late 1970s was due to the reduction in the number of 'forced' marriages occurring because of pregnancy. By 1977, of the 98,551 brides aged less than 45 years about 10,986 or 11.1 per cent were pregnant (not shown in table). It may thus be estimated that, assuming pre-marital sexual mores remained unchanged, the reduction in the incidence of pre-marital pregnancies resulted in a deferment of about 10,000 marriages in 1977.

(ii) Childbearing early in marriage:

The incipient deferment of the first birth can be traced back to the marriages of the mid-1960s. As Table 9 shows, women married in about 1958-63 started their childbearing early after marriage; about 40 per cent had their first child during the first year after marriage, more than 60 per cent by the end of the second year of marriage, and more than 75 per cent by the end of the third year. Since the marriages of the mid-1960s, each subsequent marriage cohort deferred the first birth. Of those women married in 1970 only 30 per cent had their first child during the first year, 50 per cent within two years and 64 per cent within three years after marriage. Of the most recent marriage cohort that can be traced for such a period (women married in 1975) only 19, 37 and 50 per cent had their first child within marriage durations of 0, 1 and 2 completed years respectively. The pattern of childbearing within marriage has thus changed considerably.

TABLE 9. CUMULATIVE PERCENTAGE OF MARRIED WOMEN WHO HAD THEIR FIRST NUPTIAL CONFINEMENT BEFORE THE END OF A GIVEN YEAR OF MARRIAGE

Year of marriage	Prenatally pregnant(a)	Percentage of married women aged under 45 years of age at marriage						Number of brides aged under 45 years
		Having the first nuptial confinement before the end of a given year of marriage duration(b)						
		1	2	3	4	5	10	
1951	13.9	33.2	59.5	70.6	76.6	80.3	86.4	73,718
1952	14.7	34.7	60.7	71.8	77.9	81.7	87.8	70,659
1953	15.7	35.7	61.9	73.3	79.7	83.5	89.9	67,114
1954	16.2	36.0	62.1	73.5	80.0	83.8	90.1	67,585
1955	16.8	36.9	63.5	75.0	81.3	85.1	91.7	68,564
1956	18.0	38.6	65.7	77.2	83.5	87.4	93.9	68,032
1957	18.1	38.5	64.7	75.6	81.8	85.6	91.7	69,983
1958	18.8	39.4	65.5	76.2	82.3	86.0	92.0	70,395
1959	19.8	40.6	66.8	77.6	83.6	87.1	92.8	70,553
1960	21.1	41.8	67.5	78.3	84.4	88.1	93.8	71,679
1961	22.0	42.2	66.9	77.9	84.3	88.2	94.2	72,727
1962	22.5	40.9	64.4	75.9	82.8	87.0	93.2	75,176
1963	23.3	40.0	62.8	75.3	83.1	87.8	94.4	77,031
1964	23.0	37.3	59.3	72.5	80.9	86.2	93.1	82,025
1965	22.0	34.6	55.7	69.4	78.4	83.9	91.1	89,377
1966	21.7	33.5	54.6	69.1	78.7	84.6	91.9	91,718
1967	21.4	32.5	53.6	68.3	78.2	84.2	91.5	95,474
1968	21.1	31.2	51.9	67.0	77.1	82.9	90.8	101,766
1969	20.3	29.6	50.5	65.3	75.3	81.3	89.7	107,798
1970	20.5	29.4	49.5	63.7	73.7	80.0	..	111,211
1971	19.8	28.1	46.5	60.6	70.6	77.0	..	112,817
1972	18.0	25.5	43.7	57.9	68.0	74.9	..	109,007
1973	15.6	22.8	41.0	54.7	64.8	72.0	..	107,563
1974	13.4	20.6	38.0	51.5	61.7	..	..	105,759
1975	12.2	19.3	36.9	50.5	..	..	..	98,951
1976	10.9	18.0	35.0	..	..	..	..	103,108
1977	11.1	17.6	..	..	..	..	..	98,551

(a) Prenatally pregnant = wives who delivered their first child within marriage durations of 0 to 7 completed months.

(b) Include premarital pregnancies.

To a certain extent, the timing of the first birth is lengthened by the reduced incidence of premarital conceptions leading to marriage; but those who were not pregnant at marriage also postponed the first child. Of the brides married in 1951 who were not pregnant, 22 per cent conceived and delivered their first child within a year after marriage. This proportion rose to over 26 per cent among brides married in 1961 but since then has been continuously declining. In the 1973 marriages it dropped to 8.5 per cent (see Table 7 page 170 and Plate 30 page 123); and by 1977, it had dropped to 7.3 per cent (not shown in table). The deferment of the first birth by the marriage cohorts of the 1970s is considerable compared with previous cohorts of the early 1960s.

It is worth noting that the postponement did not commence as a consequence of the economic recession of the recent years but occurred since the early 1960s. It has become more common and longer in subsequent years.

An indirect estimate of the interval between marriage and the first birth within the first five years of marriage shows that this interval has substantially lengthened by more than 13 months between those married in 1961 and those married in 1973.

AGES BY WHICH 25 PER CENT, 50 PER CENT AND 75 PER CENT OF A GIVEN GENERATION OF WOMEN HAD EVER MARRIED

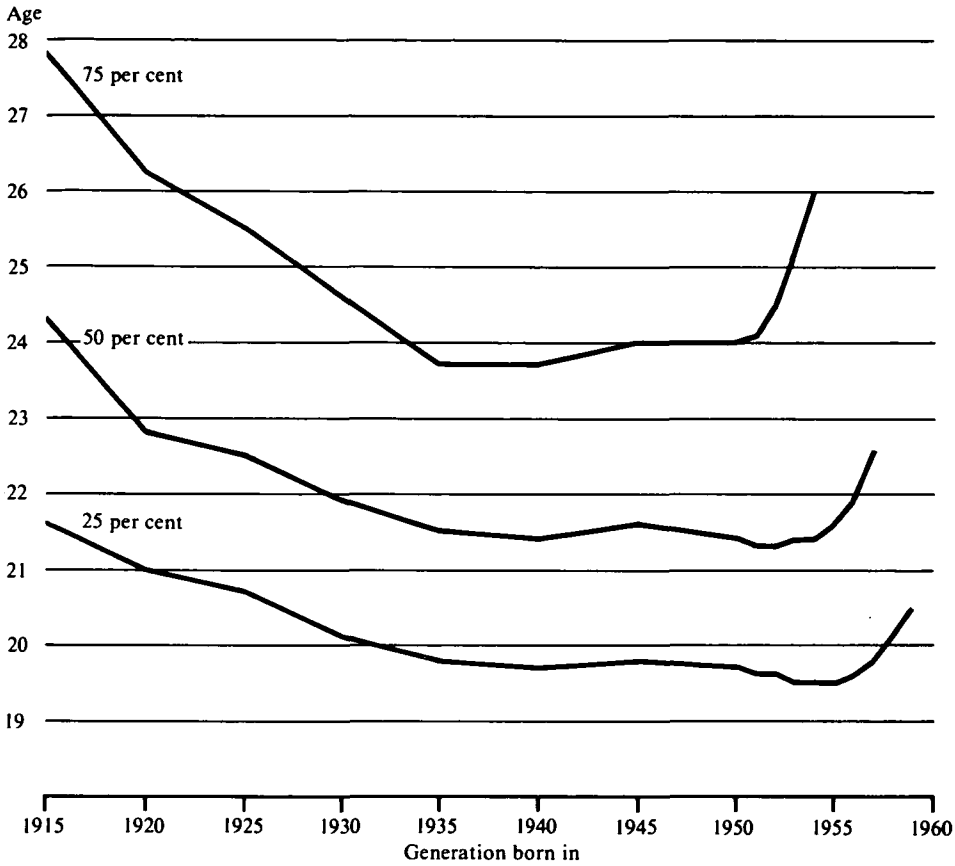


PLATE 30

TABLE 10. ESTIMATES OF THE AVERAGE INTERVAL (MONTHS) BETWEEN MARRIAGE AND FIRST BIRTH AND BETWEEN SUBSEQUENT BIRTHS FOR WOMEN MARRIED IN 1951-73 WHO HAD THEIR FIRST BIRTH WITHIN 5 YEARS OF MARRIAGE AND WITHIN TEN YEARS OF MARRIAGE

Average interval (months) between	Year of marriage							
	1951	1956	1961	1966	1968	1970	1972	1973
WITHIN 5 YEARS OF MARRIAGE								
Marriage and first birth	22.6	20.2	19.3	24.3	25.4	27.0	30.4	32.5
First birth and second birth	30.8	28.1	28.6	29.0	29.2	30.4	30.5	30.2
Second birth and third birth	33.2	29.3	35.2	37.6	38.5	44.4	47.3	47.0
WITHIN 10 YEARS OF MARRIAGE								
Marriage and first birth	26.2	23.4	22.4	27.4	28.7	..	..	..
First birth and second birth	33.1	30.8	31.7	31.9	32.2	..	..	..
Second birth and third birth	36.7	32.9	40.8	45.0	51.8	..	..	..
Third birth and fourth birth	30.4	29.5	36.2	39.0	44.1	..	..	..

Note: The method of estimation utilizes the parity progression ratios presented in Table 7, page 120. For a description of the method see N. B. Ryder, 'The emergence of a modern fertility pattern: United States 1917-66', in S. J. Behrman et al. (eds.) *Fertility and Family Planning*. University of Michigan Press, 1969, pp. 99-123.

(iii) Spacing of births and limitation of family size:

The average number of children born to married women slightly increased from 2.7 for the generation born in 1918–23 to 3.0 for the generation born in 1933–38 (see Table 3 page 116). Women who at the time of the 1976 Census were married for 15–24 years (marriage cohorts 1951–61) had an average 2.8 to 3.0 children.¹¹ From the various indices shown in Table 7 page 120, it appears that they achieved such comparatively high fertility by early marriage, by early start of childbearing and by rather high proportions having the third child after the second child (61 and 64 per cent of marriage cohorts 1951 and 1956 respectively) and after the third proceeding to having the fourth child (45 per cent) within the first ten years of marriage. Births to these cohorts were spaced comparatively closely, within 2 to 2½ years on average.

Within the same marriage duration of ten years, the marriage cohorts of the 1960s still maintained the same progression to the first and second births (91–94 and 84–85 per cent respectively) but the likelihood of a third or even fourth birth within that period dropped considerably to 42 and 24 per cent respectively.¹² Comparing the marriage cohorts of 1956 and 1968, the interval between marriage and first birth and between the first and second birth increased by about 6 and 2 months respectively but for those who proceeded to higher parities it rose by almost 20 months (from 33 to 52 months between parities 2 and 3), and 15 months (from 29 to 44 months between parities 3 and 4). The marked postponement of the first birth among the more recently married women makes the likelihood very slim of a second and third birth within a comparatively short duration of marriage (5 years in the second part of Table 7 page 120). Of the 'early starters' married in 1951–61 two thirds had the second birth and close to one third of the latter had the third birth within 5 years of marriage. Among the 1973 marriages only 72 per cent had the first child within the same marriage duration, 54 per cent of these had the second child, but only 14 per cent of wives with two previous births had the third one. It is worth noting, however, that those who had the first child and proceeded to have the second one did so with not much delay: the interval between the first and second birth was between 28 and 31 months (on average) for 1951–61 marriage cohorts and 30 to 31 months for 1970–73 marriage cohorts.

The high fertility marriages of the mid-1950s had on average 1,665 births per 1,000 marriages after 5 years of marriage (52.6 per cent were first births, 35.3 second births and 12.1 per cent third births). Of the 1973 marriages at the end of the same duration there were only 1,161 births per 1,000 marriages (62.1 per cent first births, 33.2 per cent second and 4.7 per cent third births). If the same pattern of childbearing were maintained in the 1973 marriages as that of the 1956, the 107,563 married women would have had 179,092 births by 1978 rather than the recorded 124,882. Are the 55,000 births the 1973 marriages failed to have during the years 1973–78 likely to be compensated for in the future?

The answer to this question depends on the underlying causes of the deferment of births and on the reproductive intentions of those women who decided not to start a family soon after marriage.

The future prospects

So far, we have attempted to demonstrate that the recent decline in the annual number of births, crude birthrates and age-specific birthrates has been due to the postponement of childbearing after marriage, the decline in the incidence of pre-marital pregnancies and the postponement of marriage itself. We have argued that the completed family sizes for generations have not fluctuated as sharply as time-period fertility rates and that time period fertility measures are affected to a greater extent by changes in the timing of births rather than by changes in the completed family size.

With the current low mortality (97.8 per cent of female births survive to at least the age of 30 years) and assuming 90 per cent of women of a given generation would be married before the age of 35, it can be shown that an average number of 2.35 children for ever-married women is the minimum necessary for generational replacement. (This average could be further reduced, probably to 2.25 to 2.30 on account of the children born outside marriage at current levels of ex-nuptial fertility.) When the average family size is small, on average about two children, this can be easily achieved even if marriage and childbearing are postponed to the woman's late twenties or even early thirties.

What is the future prospect of a continued drop in completed family size and further postponements of marriages and births? Or will there be a reversal of current trends? Answers to these questions are complex and they relate to views and attitudes towards marriage, childbearing and the family. Do the statistical trends presented so far represent the results of a radical and permanent change in attitudes toward marriage and childbearing, particularly among the younger generations? Do these trends indicate a general acceptance in society of de facto arrangements which may become formalised in marriage when the couples living together want to have children? Have desired family sizes changed?

There is little evidence that views and attitudes concerning marriage and childbearing have changed drastically in the 1970s. The 1971 and 1977 Melbourne Survey of Family Formation by the Australian National University¹³ confirmed that most married women rejected childlessness and having one child only; on the other hand, very large families of five and more children were considered undesirable by an overwhelming majority of the respondents.

In the 1971 Melbourne Survey, childless or one-child marriages were desired by only two per cent of couples; some nine per cent said they would be prepared to consider childlessness but almost half of them only in extreme circumstances. In contrast, 66 per cent considered two or three children as being the ideal family size.¹⁴

In the 1977 Melbourne Survey, 3 different groups were interviewed: never married males and females, recently married couples, and a follow up revisit of some of the 1971 sample.

The 1977 survey shows that there was a strong concentration on the two child family as ideal. This was particularly pronounced by comparing the answers of the women interviewed both in 1971 and 1977.

TABLE 11. PERCENTAGE DISTRIBUTION OF ANSWERS TO THE QUESTION ON IDEAL FAMILY SIZE: RESPONDENT'S CATEGORIES

	<i>1977 never married</i>		<i>1977 recently married</i>	<i>1977 re-visit</i>	<i>1971 interview</i>
	<i>Males</i>	<i>Females</i>			
Q: Generally speaking, what do you think is the ideal number of children for a couple living in Australia to have? That is, about the right number of children for most people?					
None	0.4	1.9	-	-	-
One	1.1	0.5	0.2	0.4	0.0
Two	37.7	38.8	45.7	50.7	26.6
Three	19.9	16.4	17.1	21.8	34.9
Two or three	17.4	15.4	15.9	10.0	7.4

The surveys quoted so far are not representative of the Australian population at large. They reflect views and attitudes of a metropolitan community. Similar in content but based on a representative national sample of respondents were two surveys of *Birth Expectations of Married Women* conducted by the ABS in November 1976 and June 1979.¹⁵ Both were conducted as a supplement to the regular Labour Force Survey. Questions were directed to women under the age of 40 (in 1976) or 45 (in 1979) who were married, widowed or divorced. The married women were asked how many more children they expect to have and when they expect the next child to be born. From all women information was obtained about the birth date and sex of each child.

TABLE 12. AVERAGE NUMBER OF CHILDREN ALREADY BORN AND EXPECTED PER MARRIED WOMEN 1976 AND 1979

<i>Age</i>	<i>Average number of children</i>					
	<i>Already born</i>		<i>Expected</i>		<i>Total</i>	
	<i>1976</i>	<i>1979</i>	<i>1976</i>	<i>1979</i>	<i>1976</i>	<i>1979</i>
Under 20	0.5	0.5	1.8	2.0	2.3	2.5
20-24	0.8	0.8	1.5	1.7	2.3	2.4
25-29	1.7	1.6	0.7	0.8	2.4	2.4
30-34	2.4	2.3	0.2	0.2	2.6	2.5
35-39	2.8	2.7	-	0.1	2.9	2.7

TABLE 13. NUMBER AND PER CENT OF WOMEN EXPECTING MORE CHILDREN BY AGE AND BY CHILDREN ALREADY BORN, 1979(a)

Age group	Married women with two children ('000)			Married women with three children or more ('000)		
	Expecting more	Not expecting more	Per cent not expecting more	Expecting more	Not expecting more	Per cent not expecting more
15-24 . .	18.5	31.6	63	2.3	8.8	79
25-34 . .	57.0	267.0	82	23.9	214.0	90
35-44 . .	4.3	216.6	98	4.3	355.9	99

(a) Excludes women who did not know their birth expectations and women who were expecting more children but were uncertain of the number.

The average expected number of children of married women in the two surveys remained relatively stable, between 2.3 and 2.9. In both surveys, younger married women reported lower expectations. It is likely that the expectation of the older wives was conditioned by the family size they already had (Table 12). Close to two-thirds of the younger married women (under 25 years of age) with two children in 1979 did not expect to have more children, and almost 80 per cent of those with three or more children intended to stop childbearing. The proportions rise with age and almost all married women 35-44 years of age considered their existing family size of two and three children as completed (Table 13).

Expectations of additional children were dependent partially on the sex composition of those children already born to a woman. Among married women who had had two children of the same sex, 18.4 per cent expect a third child. This compares with 9.1 per cent among those who had had a boy and a girl.¹⁶

Those married women who had yet to start their families appeared to have a strong tendency to defer the first birth. The expected interval between marriage and the first birth (Table 14) confirms the findings based on vital registration data analysed in the preceding sections. It is worth noting that older childless married women expected to postpone their first births considerably longer than younger ones and, some of them would eventually remain childless or have only one child.

TABLE 14. ACTUAL AND EXPECTED INTERVAL BETWEEN MARRIAGE AND THE FIRST BIRTH, 1979

Age	Married women with one or more children	Married women with no children
	Interval between marriage and first birth (months)	Expected interval between marriage and first birth (months)
15-19 . . .	9.5	39.7
20-24 . . .	18.6	51.1
25-29 . . .	26.6	64.1
30-34 . . .	28.5	74.8

Source: Birth Expectations of Married Women, June 1979, (Tables 13 and 15)

Conclusion

One of the many difficulties in the study of fertility trends is that we are dealing with both social and economic changes and their interaction at the same time. Deferment of the first birth undoubtedly preceded the onset of the economic recession, but the decline of the marriage rates almost certainly post-dates the beginning of the current economic recession.

None of the surveys suggests major shifts away from marriage and towards childlessness. The change appears to be in the direction of further concentration of preferred family size to two children and the deferment of childbearing after marriage. With efficient contraceptive methods available and the possibility of abortion, it is likely that such small family goals are within the families' realistic expectations. It may be expected that generational fertility will approach levels that will be only marginally above or even below replacement level. At this level of generational fertility, fluctuations in time-period birth rates and the number of births can be expected to be a feature for the near future while the intensity of these fluctuations will be dictated by changes in the age structure of the population and in the timing of marriage and of the first birth. If the current postponements of marriage and of the first birth are stabilised or reduced, we will see a short-term rise in the number of births and in the birthrates; but these increases will not be long lasting and a stabilisation of the rates will occur when the new pattern of marriage and childbearing is established.

Notes

1 For a detailed description of the work of the Royal Commission and the population debate of this period, see Neville Hicks, *This Sin and Scandal*, Australian National University, Press, 1978.

2 Report of the 18th Session of the National Health and Medical Research Council, 1944. See also Helen Ware (ed), *Fertility and Family Formation*, Department of Demography, Australian National University, 1972, p. 8-9.

3 The First Report of the *National Population Inquiry*, 1975, Vol. 1, p. 277-280.

4 Australian Bureau of Statistics, *Australian Demographic Statistics Quarterly, December Quarter 1979 and March Quarter 1980*, p. 5. Also L. T. Ruzicka and J. C. Caldwell, *The End of Demographic Transition in Australia*, Department of Demography, Australian National University, 1977.

5 For a description of fertility patterns and trends before 1970, see W. D. Borrie, 'Recent trends and patterns in fertility in Australia' *Journal of Biosocial Science*, Vol. 1, 1969, pp. 51-70. See also National Population Inquiry, *First Report*, 1975, Vol 1, Chapter 2.

6 The proportion of high order births (parity 4 and above) declined from 23 per cent of all nuptial births in 1961 to 9 per cent in 1978, while second and third births increased from 46 per cent to 52 per cent in the same period.

7 P. F. McDonald, *Marriage in Australia: Age at first marriage and proportions marrying in Australia, 1860-1971*, Department of Demography, Australian National University, 1974. 'Marriage and Divorce in Australia' Chapter 9 of *Population of Australia*, ESCAP Country Monograph, Bangkok, (in Press).

8 In an ABS Demography Research paper, Geraldine Spencer compiled detailed measures of marital fertility for marriages 1920-21 to 1976-78. *Fertility of Australian Marriages*, Demography Research paper, Australian Bureau of Statistics, October 1979.

9 The decline in pre-marital pregnancies has been accompanied by a similar decline in ex-nuptial fertility. Although the number of ex-nuptial births has increased slightly and as a proportion of all births also increased, ex-nuptial birthrates per 1,000 non-married women have declined since 1971. For a detailed discussion of ex-nuptial fertility and pre-marital pregnancies, see L. T. Ruzicka, 'non-marital pregnancies in Australia since 1947' *Journal of Bio-Social Science*, Vol. 7, 1975, pp. 113-132, also 'Pre-marital pregnancies Australia', *Journal of Marriage and the Family*, 1977, pp. 387-395.

10 For details about the prevalence of and changes in fertility control in Australia, see J. C. Caldwell, 'Fertility Control', Chapter 11 of *Population of Australia*, ESCAP Country Monography, Bangkok (in press). Also F. Yusuf, 'use of contraception among married women in New South Wales, Australia', *Journal of Bio-social science*, Vol. 12, 1980, pp. 41-49.

11 ABS, 1976 Census, *Population and Dwellings: Summary Tables*, (2417.0), Tables 36 to 38.

12 Using parity specific fertility rates and assuming an interval of 2 years between parities, Geraldine Spencer of the ABS calculated parity progression ratios for the period 1911-20 to 1972. These ratios show a rather stable progression from the first birth to the second birth of around 82-86 per cent since the 1950s and a gradual decline of the progression ratios for higher order births. 'Projecting Australia's Fertility', *Australian Journal of Social Issues*, 1974, Vol. 9, No. 4, pp. 273-284. See also Australian Bureau of Statistics, *Projections of the Population of Australia*, (3204.0), August 1979.

13 Both the surveys were conducted by the Department of Demography, Australian National University, Canberra. The results reported here were published in J. C. Caldwell, Family Size Norms, in H. Ware, *Fertility and Family Formation: Australasian Bibliography and Essays*, Monograph No. 1, Australian Family Formation Project, Demography Department, Australian National University, Canberra 1973 pp. A3-A13. H. Ware, The Limits of Acceptable Family Size: Evidence from Melbourne, Australia. *Journal of Biosocial Science*, Vol. 5, 1973, pp. 309-328.

14 C. M. Young, Spacing of children and changing patterns of childbearing. *Journal of Biosocial Science*, Vol. 9, 1977, pp. 201-226.

15 Australian Bureau of Statistics, *Birth Expectations of Married women*, November 1976 and June 1979. (3215.0)

16 Australian Bureau of Statistics, *Birth Expectations of Married women*, June 1979, (3215.0) Table 16.