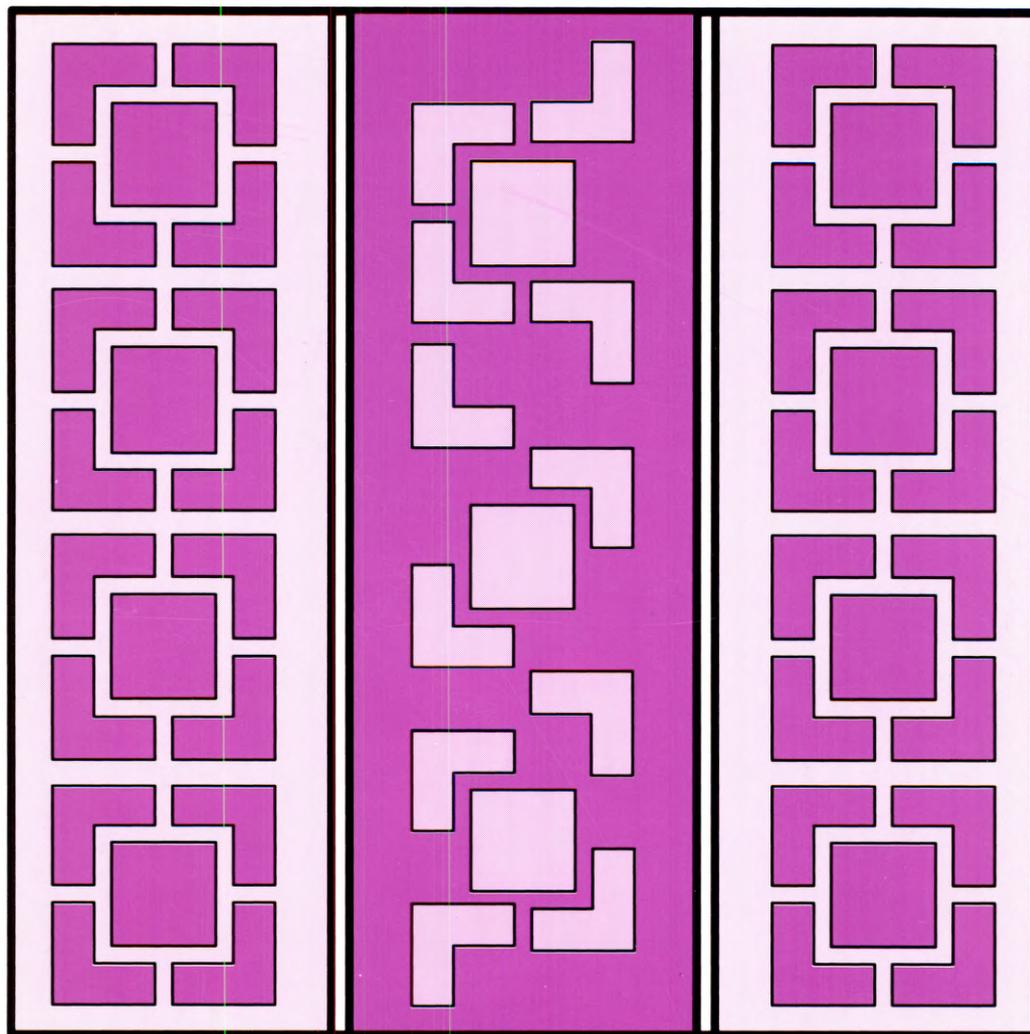


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Marriage, Divorce, and Remarriage in the 1990's



by Arthur J. Norton
and Louisa F. Miller

U.S. Department of Commerce
Economics and Statistics Administration
BUREAU OF THE CENSUS



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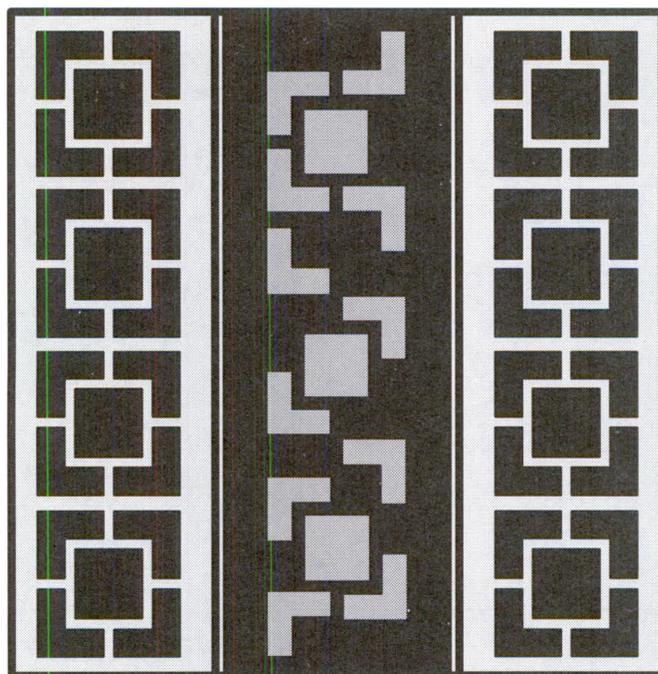
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Issued October 1992



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Preface

Current concerns about the condition of the American family, as well as discussions about “family values,” indicate a need for timely information about factors contributing to major shifts in family structure. This report, by Arthur Norton and Louisa Miller, supplies information on the well-being of families, by presenting and interpreting data from several retrospective surveys of marriage and fertility history of adults in the United States. These surveys provide the basis for a fuller understanding of variables that influence people to marry, divorce, remarry, and redivorce—actions which directly affect the living situations of individuals and families. The authors use recent trends to describe how present circumstances have evolved and to develop what they consider to be plausible scenarios for the near-term future regarding marriage and family trends.

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Marriage, Divorce, and Remarriage in the 1990's

INTRODUCTION

The remarkable changes that have taken place during the last quarter century in patterns of marriage behavior in the United States have profoundly influenced our lives socially and economically. Delayed first marriage is associated with increased education and work experience among women, which in turn is associated with delayed and lower fertility (Norton and Miller, 1990). High rates of separation and divorce, as well as larger numbers of never-married women having children, have resulted in significant numbers and proportions of adults and children experiencing life in one-parent families. Their status is often socially and economically deprived, requiring assistance from several societal sectors. It has been estimated that almost half of children today will spend time in a one-parent family (Zill, 1988; and Bumpass, 1990).

One way in which these trends have been identified and monitored has been through surveys designed to gather information about people's marriage and fertility experiences over the course of their lives. This paper presents results of a survey of the marriage and fertility histories of women in the United States conducted in June of 1990 by the Bureau of the Census, under the sponsorship of the National Institute of Child Health and Human Development. This was the fifth in a series of such surveys conducted as supplements to the Current Population Survey (CPS). The marriage and fertility history surveys were taken in 1971, 1975, 1980, 1985, and 1990. They have proven to be an invaluable source of detailed

national data that students of marriage and family have used to link marriage and fertility behavior; determine life course changes; study patterns of marriage, divorce, remarriage, and redi-orce; and determine the prevalence of step relationships.

This paper focuses on recent trends in marriage, divorce, remarriage, and redi-orce. Previous results are updated with new data on the frequency with which several cohorts of women enter and exit various marital statuses. The paper describes the nature of the relationship between certain social and demographic variables (i.e., educational attainment; fertility history; age; race and Hispanic origin; age at marital event; and duration in marital status) and marriage behavior. The paper also discusses the effects of marriage and fertility behavior on children and families, and offers some possibilities for the near-term future about where these trends may lead and their probable impact on families in the 1990's.

RECENT TRENDS IN MARRIAGE AND DIVORCE

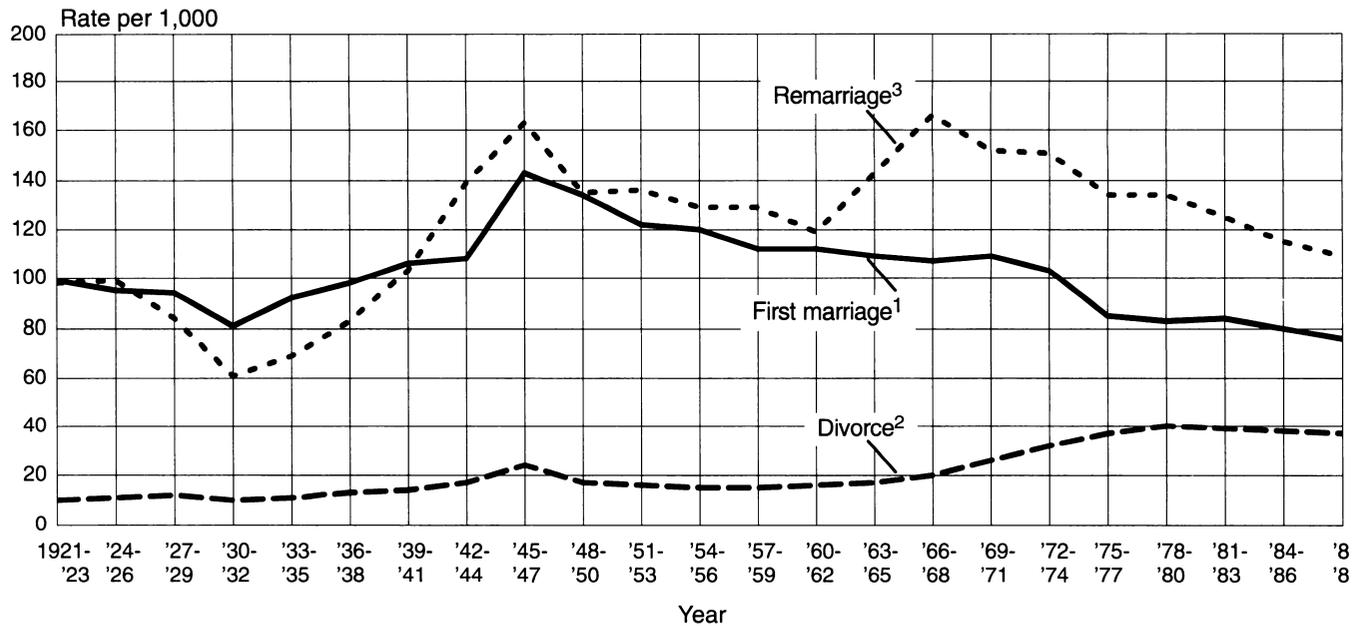
The litany of marriage and divorce statistics covering the last 25 years is familiar to most. Figure 1 and table A show the general pattern of change in first marriage, divorce, and remarriage rates. Beginning in the latter half of the 1960's, each of the three rates started on a course that would profoundly influence the character of household and family living in the United States for decades to come. Most notably, the first marriage rate began to fall, and the divorce rate began to rise. The remarriage rate initially began to rise in

response to the rising divorce rate, but ultimately began a decline similar to that of the first marriage rate. Between the late 1960's and 1980, the divorce rate doubled, reaching a level where at least 1 out of 2 marriages was expected to end in divorce (Castro Martin and Bumpass, 1989). The divorce rate remained relatively unchanged during the 1980's, exhibiting a small drop toward the end of the decade. The first marriage and remarriage rates declined rather constantly throughout both the 1970's and 1980's. The divorce trend reflected in these rates implies a continued high proportion of marriages ending in divorce, even though there has been no increase in the last decade.

The marriage rates, on the other hand, imply a less clear trend. That is, it is not clear whether the declines in these rates have been caused by a change in the timing of marriage or by a trend toward more people never marrying at all. These general rates are based upon information from the U.S. National Center for Health Statistics. Although they provide an accurate overview of marriage behavior, they do not provide details on the dynamics and the socioeconomic variables associated with marrying, divorcing, and remarrying.

Another part of the marital experience story is told through the responses to the retrospective questions asked in the June 1990 Marriage and Fertility History Survey and its predecessor surveys. These responses are the basis for developing analyses on the flow into and out of marital statuses as people move along the life course.

Figure 1. **Rates of First Marriage, Divorce, and Remarriage: 1921 to 1989**
(3-Year Averages)



Source: National Center for Health Statistics.

¹First marriages per 1,000 single women, 15 to 44 years old.

²Divorces per 1,000 married women, 15 to 44 years old.

³Remarriages per 1,000 widowed and divorced women, 15 to 54 years old.

Table A. **Numbers and Rates of First Marriage, Divorce, and Remarriage: 3-Year Averages, 1921 to 1989**

Period	First marriage		Divorce		Remarriage	
	Thousands	Rate ¹	Thousands	Rate ²	Thousands	Rate ³
1921 to 1923	990	99	158	10	186	98
1924 to 1926	992	95	177	11	200	99
1927 to 1929	1,025	94	201	12	181	84
1930 to 1932	919	81	183	10	138	61
1933 to 1935	1,081	92	196	11	162	69
1936 to 1938	1,183	98	243	13	201	83
1939 to 1941	1,312	106	269	14	254	103
1942 to 1944	1,247	108	360	17	354	139
1945 to 1947	1,540	143	526	24	425	163
1948 to 1950	1,326	134	397	17	360	135
1951 to 1953	1,190	122	388	16	370	136
1954 to 1956	1,182	120	379	15	353	129
1957 to 1959	1,128	112	381	15	359	129
1960 to 1962	1,205	112	407	16	345	119
1963 to 1965	1,311	109	452	17	415	143
1966 to 1968	1,440	107	535	20	511	166
1969 to 1971	1,649	109	702	26	515	152
1972 to 1974	1,662	103	907	32	601	151
1975 to 1977	1,508	85	1,070	37	646	134
1978 to 1980	1,580	83	1,167	40	754	134
1981 to 1983	1,632	84	1,191	39	822	125
1984 to 1986	1,595	80	1,179	38	838	115
1987 to 1989 ⁴	1,564	76	1,165	37	837	109

Source: National Center for Health Statistics.

¹First marriages per 1,000 single women, 15 to 44 years old.

²Divorces per 1,000 married women, 15 to 44 years old.

³Remarriages per 1,000 widowed and divorced women, 15 to 54 years old.

⁴Data on first marriages and remarriages are not available for 1989. The proportions for 1988 were applied to 1989 marriages (12 months ending in December).

Table B shows the distributions of women by age, race, and Hispanic origin (women of Hispanic origin may be of any race) according to whether they have ever been married, divorced after first marriage, remarried after divorce, or redivorced. Data from the four most recent marriage history surveys (1975, 1980, 1985, and 1990) are presented. Women 20 to 54 years old are featured because these age groups include women whose marriage experiences to date reflect the range of change in trends during the last 25 years. The older women have participated in the major divorce and remarriage shifts of the 1970's and 1980's, and

the younger women are and will participate in the current trends and the trends of the next decade. It is unlikely that a major influence on marriage and divorce trends will be exerted by women over age 54.

FIRST MARRIAGE

The distribution of the percentage of women who had ever married, by survey date, clearly shows an aggregate movement away from early age at first marriage. The most notable declines in percent ever married are for women in their twenties and thirties at the respective survey dates. Between 1975 and 1990, the percent of women ever married

dropped from 63 percent to 38 percent for women 20 to 24, from 87 percent to 69 percent for women 25 to 29, from 93 percent to 82 percent for women 30 to 34, and from 96 percent to 89 percent for women 35 to 39. Among women 40 and over, the percent change has been slight, with more than 90 percent recorded as being ever married. These figures support other studies (Norton and Moorman, 1987; U.S. National Center for Health Statistics, 1991; and London, 1991) showing increases in age at first marriage.

Whether or not the trend implies a significantly higher proportion of people among the total population

Table B. Marriage Experience for Women, by Age, Race, and Hispanic Origin: 1975, 1980, 1985, and 1990

(Universe is women 20 to 54 years)

Category	All races				White				Black				Hispanic origin ¹		
	1975	1980	1985	1990	1975	1980	1985	1990	1975	1980	1985	1990	1980	1985	1990
Percent ever married															
20 to 24	62.5	49.5	43.3	38.5	64.9	52.2	46.6	41.3	47.5	33.3	23.9	23.5	55.4	56.7	45.8
25 to 29	87.2	78.6	74.0	69.0	88.8	81.0	77.4	73.2	76.5	62.3	53.4	45.0	80.2	78.4	69.6
30 to 34	93.1	89.9	85.8	82.2	93.9	91.6	88.1	85.6	87.1	77.9	70.9	61.1	88.3	88.0	83.0
35 to 39	95.5	94.3	91.6	89.4	96.2	95.3	93.1	91.4	90.1	87.4	80.7	74.9	91.2	91.6	88.9
40 to 44	95.8	95.1	94.6	92.0	95.9	95.8	95.6	93.4	95.1	89.7	86.1	82.1	94.2	90.3	92.8
45 to 49	95.9	95.9	94.4	94.4	95.9	96.4	95.1	95.1	95.4	92.5	88.4	89.7	94.4	91.1	91.7
50 to 54	95.8	95.3	95.2	95.5	96.0	95.8	95.4	96.1	94.6	92.1	93.4	91.9	95.0	92.5	91.8
Percent divorced after first marriage															
20 to 24	11.2	14.2	13.9	12.5	11.3	14.7	14.4	12.8	10.6	10.5	11.0	9.6	9.4	11.0	6.8
25 to 29	17.1	20.7	21.0	19.2	17.7	21.0	21.5	19.8	15.3	20.2	18.2	17.8	13.9	14.8	13.5
30 to 34	19.8	26.2	29.3	28.1	20.0	25.8	29.0	28.6	20.5	31.4	34.4	26.6	21.1	19.2	19.9
35 to 39	21.5	27.2	32.0	34.1	21.2	26.7	32.0	34.6	22.7	32.9	34.6	35.8	21.9	26.3	29.7
40 to 44	20.5	26.1	32.1	35.8	19.7	25.5	32.0	35.2	27.4	33.7	36.9	45.1	19.7	22.8	26.6
45 to 49	21.0	23.1	29.0	35.2	20.3	22.7	28.4	35.5	26.9	29.0	36.0	39.8	23.9	24.3	24.6
50 to 54	18.0	21.8	25.7	29.5	16.8	21.0	24.6	28.5	29.7	29.0	33.7	39.2	22.5	21.8	22.9
Percent remarried after divorce															
20 to 24	47.9	45.5	44.3	38.1	50.1	47.0	46.0	39.3	(B)	(B)	(B)	(B)	(B)	(B)	(B)
25 to 29	60.2	53.4	55.3	51.8	62.0	56.4	58.3	52.8	43.1	27.9	25.4	44.4	(B)	50.5	49.5
30 to 34	64.4	60.9	61.4	59.6	67.5	63.3	64.3	61.4	41.8	42.0	41.1	42.0	58.3	44.9	45.9
35 to 39	69.5	64.9	63.0	65.0	70.9	66.9	64.9	66.5	62.6	50.6	44.8	54.0	45.2	57.1	51.2
40 to 44	69.7	67.4	64.7	67.1	71.9	68.6	67.5	69.5	57.1	58.4	45.4	50.3	(B)	50.6	53.9
45 to 49	69.6	69.2	67.9	65.9	70.7	70.4	69.6	67.2	61.7	62.7	54.6	55.0	(B)	78.9	51.0
50 to 54	73.5	72.0	68.2	63.0	73.4	72.6	68.4	65.4	73.7	72.7	64.3	50.2	(B)	(B)	62.2
Percent redivorced after remarriage															
20 to 24	(NA)	8.5	8.7	13.1	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
25 to 29	(NA)	15.6	18.2	17.8	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
30 to 34	(NA)	19.1	20.0	22.7	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
35 to 39	(NA)	24.7	26.9	28.5	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
40 to 44	(NA)	28.4	33.0	30.6	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
45 to 49	(NA)	25.1	33.8	36.4	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
50 to 54	(NA)	29.0	27.3	34.5	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)

B Base is less than 75,000.

NA Not available.

¹Persons of Hispanic origin may be of any race. No Hispanic data are available for 1975.

never marrying at all remains to be seen. It appears that the overall proportion of women ever marrying will, for the foreseeable future, be closer to 90 percent than to 95 percent, which has historically been the percentage reached by most cohorts of women.

The most striking aspect of shifts in the percentage of women ever marrying is the growing difference between White women and Black women. In the past, Black women have married later than White women but have eventually had similar proportions ever married by the time both groups reached their forties and fifties. In 1975, about 94 percent of White women and 87 percent of Black women in their early thirties had ever married. In 1990, the percent for White women 30 to 34 had fallen to 86 percent while the percent for Black women 30 to 34 had plummeted to 61 percent. Further, only 75 percent of Black women in their late thirties had ever married by June 1990, compared with 91 percent of White women in their late thirties.

The comparisons suggest an altered relationship between Blacks and Whites regarding marriage. Assuming that the small amount of first marriages that have taken place after age 40, among both Black and White women, will remain the pattern for the near future, less than 3 out of 4 Black women will eventually marry, compared with at least 9 out of 10 White women. Thus, Black women who marry will marry later than White women, and a far greater proportion of Black women than White women will never marry.¹

One of the important consequences of these developments is that a larger proportion of women will remain unmarried during their principal child-bearing years and thus be subject to the risk of an out-of-wedlock

pregnancy and of being a parent in a one-parent family (especially Black women). Recent data show a sharp drop in the proportion of women who marry to avert an out-of-wedlock first birth, from 52 percent marrying in 1960 to 1964, to 27 percent marrying in 1985 to 1989 (Bachu, 1991). A disproportionate share in the growth of one-parent situations in recent years has been accounted for by never-married women maintaining families (U.S. Bureau of the Census, 1990). That trend is likely to continue, and result in additional strains on social and economic programs upon which many of these families must rely for sustenance. The survey data do not answer the question of why Black women are increasingly less likely to marry than White women.

Marriage history survey data for women of Hispanic origin, who may be of any race, have been available only since 1980. The pattern of change in and the percent ever married, by age, for these women are similar to those for White women.

DIVORCE AFTER FIRST MARRIAGE

The data in table B for percent of ever-married women who ended their first marriage by divorce show somewhat different patterns for younger and older women. For age groups under 35, there were increases across the board between 1975 and 1980 in the percent who had divorced, but only one significant increase occurred between 1980 and 1985, or 1985 and 1990.² In fact, for the latter period, there is an indication of a drop in the percent who divorced.³ For women in age groups 35 and

above, the pattern is one of continual increase across each 5-year interval from 1975 to 1990.

The apparent trend showing differences between the younger and older women may be construed to mean a shift in propensity to divorce (less for the younger, more for the older) or a shift to later years in the timing of divorce. The latter would logically imply a longer duration of first marriage before divorce, but the data do not show this. For example, among women 25 to 29 who ended a first marriage in divorce, the median length of marriage before divorce in 1990 was 3.4 years compared with 3.7 years in 1985, and 4.0 years in 1980.⁴ For women 30 to 34, the durations of first marriage before divorce were 4.9 years in 1990, 5.2 years in 1985, and 5.5 years in 1980.⁵ It is possible that, because more women are marrying later, higher proportions of those later marriages will eventually end in divorce, but at older ages. This too seems unlikely, given the inverse relationship between age at marriage and likelihood of divorce.

A later section of this paper discusses correlates of divorce, including age at marriage. The 1990 figures reflect a trend toward fewer overall divorces among younger cohorts when they eventually finish their divorce experience than among the older cohorts.

The data also show increases in the percent divorced after first marriage for 5-year cohorts 35 to 54 years old. In general, table B shows smaller incremental gains for 35- to 49-year-olds in the percent divorced after first marriage, from 1985 to 1990, than during the earlier 5-year periods. This may mean that the percent eventually divorcing among

²The proportion of women 30 to 34 who were divorced from their first husbands rose from 26.2 percent in 1980 to 29.3 percent in 1985.

³The proportion of women 25 to 29 who were divorced from their first husbands declined significantly between 1985 and 1990. The comparable proportions for both 20- to 24-year-olds and 30- to 34-year-olds exhibited apparent declines, but neither one was statistically significant.

⁴Unpublished Current Population Survey tabulations for June 1990, 1985, and 1980.

⁵The difference between 1990 (4.9 years) and 1985 (5.2 years) is significant at the 89-percent level of confidence. The difference between 1985 (5.2 years) and 1980 (5.5 years) is significant at the 88-percent level of confidence. The usual minimum level of confidence accepted by the Bureau of the Census is 90 percent.

¹Farley and Bianchi (1987), London (1991), and others found a similar divergence in the propensity of Black and White women to marry.

the various cohorts will be somewhat less than the 1 out of 2 marriages suggested by earlier surveys (Norton and Moorman, 1987).

The data in table C illustrate this proposition. This table shows what the eventual proportion divorced after first marriage would be for women 20 to 54 in 1990, assuming future increments to the proportion divorced for these women would be the same amount as those for successively older 5-year cohorts as they passed through one of the following periods: (a) the high divorce period of 1975 to 1980, or (b) the relatively lower divorce period of 1985 to 1990.

The results of this exercise show that if one assumes a continuation of recent divorce trends, about 4 out of 10 first marriages to the youngest cohort may eventually end in divorce. Alternatively, if one assumes a return to the pattern of divorce during the 1975 to 1980 period, 5 out of 10 first marriages may eventually end in divorce.

Although either assumption may turn out to be correct for the future, the trends implied by the 1985 to 1990 changes conform to expectations expressed in earlier research (Norton and Moorman, 1987) and, in our estimation, are likely to continue for the near-term. This is especially true for the older cohorts. The data in table B and the "projections" based on 1985 to 1990 trends in table C indicate a higher percent eventually divorced for women in their thirties and early forties in 1990, than for older or younger women. This implies that women born during the early and middle baby-boom years are likely to have higher eventual percents divorced than their predecessors or successors. Divorce prospects for the younger women may be even lower than the lowest rates shown in the illustrative projections in table C. This decrease may occur since these women are more likely to marry later than the older women and the projections do not explicitly take into account age at first marriage.

The general patterns of divorce after first marriage (shown in table B) for all women 20 to 54 years old also exist for White and Black women and for women of Hispanic origin. Overall, Black women have higher percents divorced than White or Hispanic women. Women of Hispanic origin are least likely to have been divorced.

Even with an anticipated decline in divorce, the percentage of marriages in the United States that end in divorce will probably continue to be among the highest recorded in the world (United Nations, 1988). Large proportions of the population will continue to be affected by divorce and its consequences.

REMARRIAGE AFTER DIVORCE

High divorce rates create, among other things, a large pool of eligibles for remarriage. Remarriage in the United States has become a relatively common life course event. Currently, more than 4 out of 10 marriages in the United States involve a second or higher-order marriage for the bride, the groom, or both (U.S. National Center for Health Statistics, 1991).⁶ The data in table B on the percentage of women who remarried after divorce show a decline in remarriage proportions between

1975 and 1990.⁷ The data on remarriage after divorce indicate a probable overall decline in the proportion of women who eventually remarry. The figures for the oldest cohort displayed, women 50 to 54, show that the percent remarried after divorce was 74 in 1975 and 63 in 1990.

These data reflect the timing of both divorce and remarriage. For years prior to 1990, the percentage remarried generally increased for each older cohort. The results for 1990 seem to indicate that relatively fewer women remarried at ages 50 to 54 than in their forties or late thirties (although the apparent difference is not statistically significant). This could mean, in 1990, that the women age 50 to 54 are simply aberrant with respect to their remarriage behavior; or that they had relatively more members of their cohort who divorced later and were not exposed to the possibility of remarriage for a very long time; or that the percentage remarried for women 50 to 54 reflects a trend toward less remarriage overall for divorced women. If either or both of the latter two possibilities are true, near-term levels of remarriage after divorce may be closer to two-thirds than the three-fourths usually cited in marriage analyses (Bumpass, Sweet, and Castro Martin, 1990). Even if

⁶This figure includes a small proportion of remarriages after widowhood.

⁷The apparent decline between 1975 and 1990 in the proportion of 40- to 44-year-olds who had remarried (from 70 percent to 67 percent) is not statistically significant.

Table C. Percent of Women Whose First Marriage Ended in Divorce and May Eventually End in Divorce: June 1990

(Universe is ever-married women 20 to 54)

Age	Ended in divorce by June 1990	May end in divorce if their future experience is similar to older cohorts during: ¹	
		1975 to 1980	1985 to 1990
20 to 24.....	12.5	49.2	37.6
25 to 29.....	19.2	46.4	39.0
30 to 34.....	28.1	46.2	40.8
35 to 39.....	34.1	44.8	42.0
40 to 44.....	35.8	41.9	39.9
45 to 49.....	35.2	38.7	36.2
50 to 54.....	29.5	32.0	30.2

¹Increments through age 65.

such a diminution in percent remarriage occurs, remarriage will still be relatively widespread, resulting in, among other things, a continued increase in the number of reconstituted, blended, and/or stepfamilies.

The percentages remarried after divorce were higher for White women than for Black women or women of Hispanic origin.⁹ The lower propensity for Black and Hispanic women to remarry increases the likelihood of one-parent family situations among these groups—an especially important trend among Blacks for whom declines in first marriage are also contributing to the growth in one-parent families. Higher remarriage rates among Whites increase their likelihood of having to face the challenges brought on by the complexities associated with living in blended and/or stepfamily situations.

REDIVORCE

Past increases in the number of remarriages after divorce have led to increases in the number of couples subject to ending a marriage through the redivorce of at least one of the partners. Although the number of redivorces is still small and the data are not sufficient for meaningful comparisons by race or ethnicity, the data do support an overall analytic exposition covering the past decade. In 1990, about 3.1 million women 15 to 65 years old had ended their first two marriages in divorce. These women represented 5 percent of all ever-married women and 29 percent of all women who remarried after their first divorce. By contrast, in 1990, 17.2 million women 15 to 65 years old had ended a first marriage by divorce, representing about 28 percent of all ever-married women. Previous studies have indicated that redivorce is somewhat more likely than first divorce. These studies have also shown that

redivorce occurs sooner after remarriage than first divorce occurs after first marriage (Castro Martin and Bumpass, 1989).

Table D shows the percentage of remarried women in 1990 who ended a second marriage in redivorce and, using the same projection method used for table C, the percentage who may eventually end a remarriage in redivorce. The latter estimates are only illustrative. They are subject to the constraints of both methodology, and data that have high sampling variability due to the relatively infrequent occurrence of redivorce in the general population. Overall, the results imply that the eventual proportion redivorced will range from about one-quarter again as large as the eventual proportion of women who may be expected to end a first marriage by divorce for the youngest cohorts shown to virtually no difference for women in the older cohorts (particularly following the pattern of change between 1985 and 1990). The results suggest that no clear-cut assertion can be made that redivorce is more probable than divorce after first marriage.

CORRELATES OF DIVORCE AND REMARRIAGE

There are several variables that seem to be causally linked with the likelihood of divorce or remarriage. Earlier studies have documented the association between age at marriage and divorce; educational attainment and divorce; premarital pregnancy and divorce; and age at divorce and likelihood of remarriage (Norton and Moorman, 1987). This section of the paper focuses on these correlates of divorce and remarriage, featuring the results of the June 1990 survey.

The June 1990 results shown in table E reaffirm the inverse relationship between age at first marriage and likelihood of divorce. For each 5-year (at survey date) age group presented, women who married before age 20 were significantly more likely to have ended a first marriage in

divorce than women who first married at later ages. Further, women who married at age 30 or older had much lower proportions divorced than women who married at younger ages.⁹ For example, in 1990, among women 50 to 54, about one-third of those who first married in their teens had ended that marriage in divorce, but only 15 percent of the women who first married at age 30 or older had done so. Similar patterns may be seen for each of the other age groups shown.

Table F shows the association between educational attainment and likelihood of divorce. Overall, the data show no unidimensional association between education and divorce. The data do appear to support the so-called "Glick effect" which suggests that people with an incomplete education—those who apparently stopped short of a diploma or degree—are more likely to divorce than people who attain exact diploma or degree levels.¹⁰

For 4 out of the 5 age groups shown, women who had completed exactly 12 years of school or exactly 16 years of school had lower percents divorced than women who had more years of school completed, but who had not attained

⁹The differences for 55- to 59-year-olds between the likelihood of having been divorced from one's first husband if one was first married at 30 years of age or older versus at either 20 to 24 years of age or 25 to 29 years of age are not statistically significant.

¹⁰Data from the 1990 survey identify only years of school completed and not whether a diploma or degree was attained. We infer from these results that 12 years completed is equivalent to achieving a high school diploma and 16 years completed is equivalent to achieving a bachelor's degree from college. Data from the 1990 census question on educational attainment, as well as from Current Population Survey questions on educational attainment, beginning in 1993, will reflect a diploma/degree-based set of response categories. The results will directly identify persons who received high school diplomas, Associate degrees, Bachelor's degrees, or advanced post-secondary degrees. Under the current scheme, the proportion of persons who completed 13 to 15 years of school and who received an Associate's degree and the proportion of persons who completed more than 16 years of school and received degrees beyond the Bachelor's level are unknown.

⁸The apparent difference between the proportions of Black and Hispanic-origin women remarriage after a divorce from their first spouse is not statistically significant.

Table D. Percent of Women Whose Second Marriage Ended in Redivorce and May Eventually End in Redivorce: June 1990

(Universe is women 20 to 65 married two or more times whose first marriage ended in divorce)

Age	Ended in redivorce by June 1990	May end in redivorce if their future experience is similar to older cohorts during:	
		1980 to 1985	1985 to 1990
20 to 24.....	13.1	62.1	46.8
25 to 29.....	17.8	57.1	42.4
30 to 34.....	22.7	57.6	42.8
35 to 39.....	28.5	55.6	40.1
40 to 44.....	30.6	49.4	38.5
45 to 49.....	36.4	49.8	40.9
50 to 54.....	34.5	45.7	38.3
55 to 59.....	31.1	38.3	31.1
60 to 65.....	27.0	(X)	(X)

X Not applicable.

Table E. Percent of Women Divorced After First Marriage, by Age at First Marriage and Age at Survey Date: June 1990

(Universe is ever-married women)

Age at first marriage	Age at survey date				
	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59
Under 20.....	47.4	46.6	44.5	34.4	32.9
20 to 24.....	29.3	32.1	31.7	26.3	19.5
25 to 29.....	24.0	25.6	22.6	27.9	18.3
30 and over.....	10.4	11.7	15.8	14.7	16.9

Table F. Percent of Women Divorced After First Marriage, by Years of School Completed and Age at Survey Date: June 1990

(Universe is ever-married women)

Years of school completed	Age at survey date				
	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59
Less than 12.....	36.1	32.7	36.3	31.0	25.8
12.....	35.1	37.9	34.7	25.8	24.0
13 to 15.....	38.8	37.8	41.0	35.7	31.2
16.....	25.2	31.5	26.5	24.5	18.1
17 or more.....	27.9	32.5	33.0	38.4	25.8

the next "degree" level. More specifically, women who completed 12 years of school had lower percents divorced than women who completed 13 to 15 years of school; and women who completed 16 years of school had lower percents divorced than women who completed 17 or more years of school. Overall, women who completed exactly 16 years of school had the lowest proportions divorced after first marriage.

Another variable that appears to influence the likelihood of divorce

among women who have ever borne children is the circumstance of the first birth. Women who have ever married and who had a premarital first birth or a premaritally conceived, but postmaritally delivered first birth, appear to have greater proportions divorced than women whose first birth was conceived after first marriage. About three-fourths of the 52 million ever-married mothers covered by the June 1990 survey had conceived and borne their children

after first marriage. Of the remaining women, about equal proportions had either a premarital conception/postmarital birth (12.6 percent) or a premarital birth (12.6 percent). The data in table G indicate that, for all age groups shown, the likelihood of divorce after first marriage is similar for mothers who conceived or bore their first child before marriage. However, both groups have higher proportions divorced after first marriage than do mothers whose first child was postmaritally conceived.

The frequency with which women bear children before marriage has been increasing. For example, 29 percent of first births to women 15 to 34, from 1985 to 1989, were to unmarried women, compared with 13 percent of first births for unmarried women from 1960 to 1964 (Bachu, 1991). There is a difference between race and ethnic groups in the proportion of first births that took place before the mother's marriage. About 70 percent of first births to Black women 15 to 34, from 1985 to 1989, were premarital births. Comparable estimates for Whites and Hispanics (who may be of any race) were 22 percent and 38 percent, respectively.

Table H shows that for ever-married mothers 40 to 49 years old (a group that has completed most of its childbearing and first marriage experience) having conceived and/or borne a first child before marriage increases the chance for divorce among White women. However, under the same circumstances, Black women or women of Hispanic origin do not have an increased chance of divorce. Apparently the steeply declining rates of marriage among Black women are not a function of fear of greater risk of divorce because of premarital childbearing. The relatively high overall incidence of divorce after first marriage for Black women may be only one of several factors that influence some Black women not to marry (to avoid the risk of eventual divorce).

Remarriage after the first marriage ended in divorce occurs most frequently for women who divorced at relatively young ages and who have been divorced for relatively short periods of time. Table I shows clearly that among women who divorced in their twenties or thirties (the ages during which 8 out of 10 divorces after first marriage occur), those who divorced at the youngest ages were more likely to have remarried. About 3 out of 4 women who divorced in their early twenties were remarried by the survey date, compared with fewer than one-half of the women who divorced in their late thirties. This relationship holds for White women, Black women, and women of Hispanic origin.¹¹ These data do not consider the length of time a woman has spent in a divorced status at risk of remarriage.

The June 1990 data show the median duration of first marriage before divorce to be about 6.3 years for women 20 to 54. Among women in their late twenties and early thirties, ages when divorce is most likely to occur, the duration of first marriage before divorce has been declining. Women 25 to 29 in 1990 had spent a median of 3.4 years in a first marriage before divorce, compared with a median duration of 4.0 years for women 25 to 29 in 1980. Similarly, among women 30 to 34, the median duration in first marriage before divorce fell from 5.5 years in 1980 to 4.9 years in 1990. The 1990 survey results indicate that for women who divorced after first marriage, divorce occurred within 3 years for 22 percent, within 5 years for 38 percent, within 10 years for 65 percent, and within 20 years for 90 percent. If relatively greater proportions of women in 1990 are yet to divorce, compared with women of the same ages in 1980, the median durations between marriage and divorce for women in 1990 will move closer

¹¹Only about 1 out of 4 Black and Hispanic women divorced from their first husbands in their late thirties had remarried by the survey date.

Table G. Percent of Mothers Divorced After First Marriage, by Birth History at First Marriage and Age at Survey Date: June 1990

(Universe is ever-married mothers)

Birth history	Age at survey date				
	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59
With a premarital first birth	37.9	41.8	45.0	42.9	29.3
With a premaritally conceived/ postmarital first birth	40.2	43.1	44.6	37.2	30.8
With a postmaritally conceived first birth	31.0	32.7	32.6	27.0	23.9

Table H. Percent of Mothers 40 to 49 Years Divorced After First Marriage, by Birth History at First Marriage and Race and Hispanic Origin: June 1990

Birth history	All races	White	Black	Hispanic origin ¹
With a premarital first birth or premaritally conceived/postmarital first birth	43.5	44.9	42.4	31.8
With a postmaritally conceived first birth	32.6	32.3	43.3	24.1

¹Persons of Hispanic origin may be of any race.

Table I. Percent of Women Remarried After Divorce From First Marriage, by Age at Divorce and Race and Hispanic Origin: June 1990

(Universe is women whose first marriage ended in divorce)

Race and Hispanic origin	Age at divorce				
	All ages	20 to 24	25 to 29	30 to 34	35 to 39
All races	63.1	77.8	67.7	53.5	44.6
White	64.6	78.6	68.5	56.1	47.0
Black	51.4	70.6	60.9	38.3	29.5
Hispanic origin ¹	51.8	68.6	58.3	40.6	24.2

¹Persons of Hispanic origin may be of any race.

to those for women in 1980. However, this may not be likely since the median duration of first marriage before divorce for women 40 to 44 (women who had by and large completed their first marriage and divorce experience) fell from 9.7 years in 1980 to 7.6 years in 1990. Insofar as the trend toward shorter duration of marriage before divorce reduces the age at which women divorce, and insofar as younger age at divorce implies greater likelihood of remarriage, one might expect the percent remarrying to eventually increase. However, as of June 1990, there has been no indication of an upturn in the remarriage rate among women.

The time spent in a divorced status is undoubtedly associated with likelihood of eventual remarriage. In the 1990 survey, the median duration of divorce before remarriage for all women who ended a first marriage in divorce, and who subsequently remarried, was 2.5 years. About one-fourth of those who remarried had done so within 1 year of divorce, and three-fourths of the remarriers had done so within 5 years of divorce. Thus, most remarriages take place relatively soon after divorce, and the frequency of remarriage decreases as the duration in a divorced status increases. For example, the data in table J show that, in 1990, among women 40 to 49 who ended a first marriage

in divorce: 70 percent of those divorced for 3 or more years had remarried; 73 percent of those divorced for 5 or more years had remarried; 80 percent of those divorced for 10 years or more had remarried; and 86 percent of those divorced for 15 years or more had remarried. Only 13 percentage points were added to the percent remarried when the duration since first divorce was extended from 5 years to 15 years. A similar pattern is shown for women 50 to 59 in 1990.

TRENDS IN FAMILY GROUPS WITH CHILDREN

Trends in marriage behavior are generally responsible for trends in family formation and/or dissolution. This section describes recent developments regarding family living arrangements for those families with children present.

The total number of family groups with children under 18 rose from 32.2 million in March 1980, to 34.7 million (a 7.8 percent increase) in March 1990 (see table K).¹² During the same period, the number of two-parent family groups remained essentially unchanged (24.9 million in 1990), and the number of one-parent family groups increased by 40.9 percent (to 9.7 million). The 1970 to 1980 decade shows the same basic trends.

Premarital childbearing, separation, and divorce have caused one-parent family groups to become much more prevalent (and accepted) in the United States in the last 20 years. Now, about 3 out of 10 family groups are maintained by just one parent, but in 1970 only 1 out of 10 were. The trend toward more one-parent family groups holds regardless of race or Hispanic origin. However, the magnitude varies. In 1990, one-parent family groups accounted for 22.6 percent of all White, 60.6

Table J. Percent of Women 40 to 49 Years and 50 to 59 Years Remarried After Divorce From First Marriage, by Years Since Divorce: June 1990

(Universe is women whose first marriage ended in divorce)

Years since divorce	Age at survey date	
	40 to 49	50 to 59
3 or more.....	70.3	66.3
5 or more.....	72.9	68.1
10 or more.....	80.0	73.1
15 or more.....	85.5	77.0

percent of all Black, and 33.2 percent of all Hispanic family groups. For Black children, the one-parent family group is now the most common living arrangement. For White and Hispanic children, the one-parent family group is now a common living arrangement, but not the most common one.

There were 1,351,000 one-parent family groups maintained by fathers in 1990. This was more than a three-fold increase since 1970, when there were only 393,000 one-parent family groups maintained by men. However, women still maintained 86.1 percent of the one-parent family groups in 1990. So, the problems of single parents today are still, for the great majority, the problems of single mothers.

Relatively pervasive remarriage, as well as premarital childbearing, have ensured that two-parent families are not a homogeneous group. The June CPS marital and fertility history supplement allows us to look at married-couple family households by type of family.¹³ In 1990, 5.3 million married-couple family households contained at least one stepchild under age 18 (see table L).¹⁴ This was 20.8 percent of all married-couple family households with children. In 1980, 3.9 million such households existed, constituting 16.1 percent

of all married-couple households with children. One can see that both the number of these families that exist and their proportion of all married-couple families with children is increasing—although certainly not as rapidly as the growth in one-parent families. There were slightly more families containing only stepchildren in 1990 (2.8 million) than there were families with a “blend” of step and other children (2.5 million). Still, the split was fairly even. Both of these family types can be expected to face separate and distinct challenges.

It is useful to view the data from a slightly different angle and see how many children are being raised in each of the various possible living arrangements. In March 1990, 72.5 percent of children under 18 were living with two parents (including step and adoptive parents), 24.7 percent were living with one parent, and 2.7 percent were living with neither parent (see table M). The comparable proportions for March 1970 were as follows: 85.2 percent living with two parents, 11.9 percent living with one parent, and 2.9 percent living with neither parent.¹⁵ It is clear that children today are living in a much wider variety of living arrangements than they were 20 years ago. This wider variety can be explained by a greater incidence of divorce and a greater incidence of never-married women giving birth today than 20 years ago

¹³This section of the analysis excludes subfamilies. The methodology used to derive parent and family type is described in Miller and Moorman (1989). The first date for which these family and child type data were derived was June 1980.

¹⁴For this analysis, children were still considered to be stepchildren even if they had been adopted by the nonbiological parent with whom they were living at the time of the survey.

¹⁵The proportions of children living with neither parent in March 1990 and March 1970 (2.7 percent versus 2.9 percent) were not statistically different.

¹²These data come from the March CPS. Family groups include family households, related subfamilies, and unrelated subfamilies.

Table K. Family Groups with Children Under 18, by Race and Hispanic Origin of Householder or Reference Person: March 1990, 1980, and 1970

(Numbers in thousands)

Race and Hispanic origin	1990		1980		1970		Average annual percent change	
	Number	Percent	Number	Percent	Number	Percent	1980 to 1990	1970 to 1980
All races								
Family groups with children	34,670	100.0	32,150	100.0	29,631	100.0	0.8	0.8
Two-parent family groups	24,921	71.9	25,231	78.5	25,823	87.1	-0.1	-0.2
One-parent family groups	9,749	28.1	6,920	21.5	3,808	12.9	3.4	6.0
Maintained by mother	8,398	24.2	6,230	19.4	3,415	11.5	3.0	6.0
Maintained by father	1,351	3.9	690	2.1	393	1.3	6.7	5.6
White								
Family groups with children	28,294	100.0	27,294	100.0	26,115	100.0	0.4	0.4
Two-parent family groups	21,905	77.4	22,628	82.9	23,477	89.9	-0.3	-0.4
One-parent family groups	6,389	22.6	4,664	17.1	2,638	10.1	3.1	5.7
Maintained by mother	5,310	18.8	4,122	15.1	2,330	8.9	2.5	5.7
Maintained by father	1,079	3.8	542	2.0	307	1.2	6.9	5.7
Black								
Family groups with children	5,087	100.0	4,074	100.0	3,219	100.0	2.2	2.4
Two-parent family groups	2,006	39.4	1,961	48.1	2,071	64.3	0.2	-0.5
One-parent family groups	3,081	60.6	2,114	51.9	1,148	35.7	3.8	6.1
Maintained by mother	2,860	56.2	1,984	48.7	1,063	33.0	3.7	6.2
Maintained by father	221	4.3	129	3.2	85	2.6	5.4	4.2
Hispanic origin¹								
Family groups with children	3,429	100.0	2,194	100.0	(NA)	(NA)	4.5	(NA)
Two-parent family groups	2,289	66.8	1,626	74.1	(NA)	(NA)	3.4	(NA)
One-parent family groups	1,140	33.2	568	25.9	(NA)	(NA)	7.0	(NA)
Maintained by mother	1,003	29.3	526	24.0	(NA)	(NA)	6.5	(NA)
Maintained by father	138	4.0	42	1.9	(NA)	(NA)	(B)	(NA)

B Base is less than 75,000.

NA Not available.

¹Persons of Hispanic origin may be of any race.

Note: Family groups comprise family households, related subfamilies and unrelated subfamilies.

Table L. Married-Couple Family Households With Children, by Type of Family: June 1990, 1985, and 1980

(Numbers in thousands)

Type of family	1990		1985		1980	
	Number	Percent	Number	Percent	Number	Percent
Total	25,314	100.0	23,868	100.0	24,091	100.0
Biological	19,253	76.1	18,470	77.4	19,037	79.0
Adoptive	345	1.4	303	1.3	429	1.8
Biological mother-stepfather	2,619	10.3	2,207	9.2	1,818	7.5
Biological father-stepmother	152	0.6	180	0.8	171	0.7
Joint biological-step	2,475	9.8	2,038	8.5	1,862	7.7
Joint biological-adoptive	324	1.3	223	0.9	429	1.8
Joint step-adoptive	8	-	15	0.1	12	-
Joint bio-step-adoptive	-	-	29	0.1	25	0.1
Unknown	137	0.5	403	1.7	309	1.3

- Represents zero.

(Saluter, 1991 and U.S. National Center for Health Statistics, 1991).

The proportions of children living with two, one, and no parents varied widely in the past by race and Hispanic origin, and they continue to vary today. In 1990, more Black children were living with one parent (54.8 percent)—primarily their mother—than with two parents. Among White children, 19.2 percent lived

with one parent, and among Hispanic children 30.0 percent lived with one parent. The proportions living with one parent in 1980 were lower, but the pattern by race and Hispanic origin was the same.

Even if one restricts the universe to children in married-couple family households, diversity abounds. An estimated 81.5 percent of such children (or 37.0 million) were living with a biological mother and father

in June 1990 (see table N). This means that almost 1 out of 5 children were not living in what Americans tend to think of as the “traditional” family—birth mother, birth father, and child(ren). Most of these children (6.6 million) were living with their biological mother and a stepfather. It is still quite unusual for a father to retain custody of minor children after a divorce. Only 608,000

Table M. Living Arrangements of Children Under 18 Years, by Race and Hispanic Origin: March 1990, 1980, and 1970

(Numbers in thousands. Excludes persons under 18 years old who were maintaining households or family groups)

Living arrangement	Number			Percent distribution		
	1990	1980	1970	1990	1980	1970
All Races						
Children under 18 years.....	64,137	63,427	69,162	100.0	100.0	100.0
Living with—						
Two parents.....	46,503	48,624	58,939	72.5	76.7	85.2
One parent.....	15,867	12,466	8,199	24.7	19.7	11.9
Mother only.....	13,874	11,406	7,452	21.6	18.0	10.8
Father only.....	1,993	1,060	748	3.1	1.7	1.1
Other relatives.....	1,422	1,949	1,547	2.2	3.1	2.2
Nonrelatives only.....	346	388	477	0.5	0.6	0.7
White						
Children under 18 years.....	51,390	52,242	58,790	100.0	100.0	100.0
Living with—						
Two parents.....	40,593	43,200	52,624	79.0	82.7	89.5
One parent.....	9,870	7,901	5,109	19.2	15.1	8.7
Mother only.....	8,321	7,059	4,581	16.2	13.5	7.8
Father only.....	1,549	842	528	3.0	1.6	0.9
Other relatives.....	708	887	696	1.4	1.7	1.2
Nonrelatives only.....	220	254	362	0.4	0.5	0.6
Black						
Children under 18 years.....	10,018	9,375	9,422	100.0	100.0	100.0
Living with—						
Two parents.....	3,781	3,956	5,508	37.7	42.2	58.5
One parent.....	5,485	4,297	2,996	54.8	45.8	31.8
Mother only.....	5,132	4,117	2,783	51.2	43.9	29.5
Father only.....	353	180	213	3.5	1.9	2.3
Other relatives.....	654	999	820	6.5	10.7	8.7
Nonrelatives only.....	98	123	97	1.0	1.3	1.0
Hispanic origin¹						
Children under 18 years.....	7,174	5,459	4,006 ²	100.0	100.0	100.0
Living with—						
Two parents.....	4,789	4,116	3,111	66.8	75.4	77.7
One parent.....	2,154	1,152	(NA)	30.0	21.1	(NA)
Mother only.....	1,943	1,069	(NA)	27.1	19.6	(NA)
Father only.....	211	83	(NA)	2.9	1.5	(NA)
Other relatives.....	177	183	(NA)	2.5	3.4	(NA)
Nonrelatives only.....	54	8	(NA)	0.8	0.1	(NA)

NA Not available.

¹Persons of Hispanic origin may be of any race.

²All persons under 18 years.

Source of 1970 Hispanic origin data: U.S. Bureau of the Census, 1970 Census of Population, PC(2)-1C, *Persons of Spanish Origin*. Data are for April 1, 1970.

children were living with a stepmother and a biological father in 1990.

CONCLUSION

America has seen the marriage and divorce norms and behaviors that are acceptable to our society evolve over the past 25 years—with a particular emphasis on the broadening of acceptable behaviors. Women feel freer to have and raise children without getting married. Couples are marrying later, and they are divorcing and remarrying in numbers that would have been beyond comprehension 25 years ago.

The data show that proportionally more women will never marry than has been the case in the past.

The data also show that divorce has peaked and will subside somewhat, but will still remain high enough to continue to merit major attention as a social and economic issue. In addition, the data show that, although remarriage rates have fallen, the growth of consequent stepfamilies is significant, and that a large segment of the United States adult population flows into and out of several marital categories during their life course.

These societal changes have led to American children today living in increasingly varied and complex living arrangements. More children are living with only one parent. The vast majority of these children are living with their mother, but it is no

longer unheard of for children (including girls) to be living with a single father. Even children living with two parents today are more likely to be living in a family that is not composed of two biological parents and only full biological siblings—the “traditional” family of 25 years ago. They are more likely to have step-parents and half brothers/sisters than ever before. Thus the family has become a more complex institution than it once was.

Finally, we suggest that during the 1990’s the following will occur. Later age at marriage or not marrying at all will continue as in the recent past, resulting in, among other things, more families maintained by never-married mothers, continued

Table N. Children Under 18 Years of Age Living With Biological, Step, and Adoptive Married-Couple Parents, by Race of Mother: June 1990, 1985, and 1980

(Numbers in thousands. Children of householders only)

Category	1990		1985		1980	
	Number	Percent	Number	Percent	Number	Percent
All races						
Total own children under 18 years	45,448	100.0	45,347	100.0	47,248	100.0
Biological mother and father.....	37,026	81.5	37,213	82.1	39,523	83.7
Biological mother-stepfather.....	6,643	14.6	6,049	13.3	5,355	11.3
Stepmother-biological father.....	608	1.3	740	1.6	727	1.5
Adoptive mother and father.....	974	2.1	866	1.9	1,350	2.9
Unknown mother or father.....	197	0.4	479	1.1	293	0.6
White						
Total own children under 18 years	39,732	100.0	39,942	100.0	42,329	100.0
Biological mother and father.....	32,975	83.0	33,202	83.1	35,852	84.7
Biological mother-stepfather.....	5,258	13.2	4,918	12.3	4,362	10.3
Stepmother-biological father.....	549	1.4	676	1.7	664	1.6
Adoptive mother and father.....	815	2.1	754	1.9	1,209	2.9
Unknown mother or father.....	135	0.3	391	1.0	242	0.6
Black						
Total own children under 18 years	3,671	100.0	3,816	100.0	3,775	100.0
Biological mother and father.....	2,336	63.6	2,661	69.7	2,698	71.5
Biological mother-stepfather.....	1,149	31.3	952	24.9	877	23.2
Stepmother-biological father.....	38	1.0	50	1.3	46	1.2
Adoptive mother and father.....	97	2.6	76	2.0	119	3.1
Unknown mother or father.....	51	1.4	77	2.0	35	0.9
Hispanic origin¹						
Total own children under 18 years	4,568	100.0	(NA)	(NA)	(NA)	(NA)
Biological mother and father.....	3,703	81.1	(NA)	(NA)	(NA)	(NA)
Biological mother-stepfather.....	699	15.3	(NA)	(NA)	(NA)	(NA)
Stepmother-biological father.....	38	0.8	(NA)	(NA)	(NA)	(NA)
Adoptive mother and father.....	101	2.2	(NA)	(NA)	(NA)	(NA)
Unknown mother or father.....	27	0.6	(NA)	(NA)	(NA)	(NA)

NA Not available.

¹Persons of Hispanic origin may be of any race.

higher rates of post-secondary enrollment for young women, and continued high rates of female labor force participation. In addition, divorce may drop to a point where 4 out of 10 marriages may be expected to dissolve rather than the 5 out of 10 generally observed during the 1980's. Also, remarriage will be less frequent than in the past with about 2 out of 3 women in the 1990's expected to remarry after divorce. Overall, the institutions serving the needs of people affected by the above-mentioned trends will be better equipped to respond, having learned during the 1980's what the social and economic consequences of these trends have been.

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Appendix

Source and Accuracy of Estimates

SOURCE OF DATA

Most estimates in this report come from data obtained from the Current Population Survey (CPS) conducted in June of years 1970 through 1990. The Bureau of the Census conducts the survey every month, although this report uses mostly June data for its estimates. Also, some estimates come from March CPS data. The March and June surveys use two sets of questions, the basic CPS and the supplements.

Basic CPS. The basic CPS collects primarily labor force data about the civilian noninstitutional population. Interviewers ask questions concerning labor force participation about each member 15 years old and over in every sample household.

The present CPS sample was selected from the 1980 Decennial Census files with coverage in all 50 States and the District of Columbia. The sample is continually updated to account for new residential construction. It is located in 729 areas comprising 1,973 counties, independent cities, and minor civil divisions. About 60,000 occupied housing units are eligible for interview every month. Interviewers are unable to obtain interviews at about 2,600 of these units because the occupants are not found at home after repeated calls or are unavailable for some other reason.

Since the introduction of the CPS, the Bureau of the Census has redesigned the CPS sample several times. These redesigns have improved the quality and reliability of the data and have satisfied changing data needs. The most recent changes were completely implemented in July 1985.

The following table summarizes changes in the CPS designs for the years for which data appear in this report.

Description of Current Population Survey

Time period	Number of sample areas	Housing units eligible ¹	
		Inter-viewed	Not inter-viewed
1990.....	729	57,400	2,600
1985.....	² 629/729	57,000	2,500
1980.....	629	65,500	3,000
1975.....	461	46,500	2,500
1970.....	449	48,000	2,000

¹Excludes about 2,500 Hispanic households added from the previous November sample. (See "March Supplement.")

²The CPS was redesigned following the 1980 Decennial Census of Population and Housing. During phase-in of the new design, housing units from the new and old designs were in the sample.

June Supplement. In addition to the basic CPS questions, interviewers asked supplementary questions in June about marriage, divorce, and fertility of women 15 to 65 years old.

March Supplement. In addition to the basic CPS questions, interviewers asked supplementary questions in March about family living arrangements.

To obtain more reliable data for the Hispanic population, the March CPS sample was increased by about 2,500 eligible housing units. These housing units were interviewed the previous November and contained at least one sample person of Hispanic origin. In addition, the sample included persons in the Armed Forces living off post or with their families on post.

Estimation Procedure. This survey's estimation procedure inflates weighted sample results to independent estimates of the civilian noninstitutional population of the United States by age, sex, race, and Hispanic/non-Hispanic categories. The independent estimates were based on statistics from decennial censuses of population; statistics on births, deaths, immigration, and emigration; and statistics on the size of the Armed Forces.

The independent population estimates used for 1981 to present were based on updates to controls established by the 1980 Decennial Census. Data before 1981 were based on independent population estimates from the most recent decennial census. For more details on the change in independent estimates, see the section entitled "Introduction of 1980 Census Population Controls" in an earlier report (Series P-60, No. 133). The estimation procedure for the March supplement included a further adjustment so the husband and wife of a household received the same weight.

The estimates in this report for 1985 and later also employ a revised survey weighting procedure for persons of Hispanic origin. In previous years, weighted sample results were inflated to independent estimates of the noninstitutional population by age, sex, and race. There was no specific control of the survey estimates for the Hispanic population. Since then, the Bureau of the Census developed independent population controls for the Hispanic population by sex and detailed age groups. Revised weighting procedures incorporate these new controls. The independent population estimates include some, but not all, undocumented immigrants.

ACCURACY OF ESTIMATES

Since the CPS estimates come from a sample, they may differ from figures from a complete census using the same questionnaires, instructions, and enumerators. A sample survey estimate has two possible types of errors: sampling and nonsampling. The accuracy of an estimate depends on both types of errors, but the full extent of the nonsampling error is unknown. Consequently, one should be particularly careful when interpreting results based on a relatively small number of cases or on small differences between estimates. The standard errors for CPS estimates primarily indicate the magnitude of sampling error. They also partially measure the effect of some nonsampling errors in responses and enumeration but do not measure systematic biases in the data. (Bias is the average over all possible samples of the differences between the sample estimates and the desired value.)

Nonsampling Variability. There are several sources of nonsampling errors, including the following:

- Inability to get information about all sample cases.
- Definitional difficulties.
- Differences in interpretation of questions.
- Respondents' inability or unwillingness to provide correct information.
- Respondents' inability to recall information.

- Errors made in data collection, such as recording and coding data.
- Errors made in processing the data.
- Errors made in estimating values for missing data.
- Failure to represent all units with the sample (undercoverage).

CPS undercoverage results from missed housing units and missed persons within sample households. Compared with the level of the 1980 Decennial Census, overall CPS undercoverage is about 7 percent. CPS undercoverage varies with age, sex, and race. Generally, undercoverage is larger for males than for females and larger for Blacks and other races combined than for Whites. As described previously, ratio estimation to independent age-sex-race-Hispanic population controls partially corrects for the bias caused by undercoverage. However, biases exist in the estimates to the extent that missed persons in missed households or missed persons in interviewed households have different characteristics from those of interviewed persons in the same age-sex-race-Hispanic group. Furthermore, the independent population controls have not been adjusted for undercoverage in the 1980 census.

For additional information on nonsampling error, including the possible impact on CPS data when known, refer to Statistical Policy Working Paper 3, *An Error Profile: Employment as Measured by the Current Population Survey*, Office of Federal Statistical Policy and Standards, U.S. Department of Commerce, 1978; and Technical Paper 40, *The Current Population Survey: Design and Methodology*, Bureau of the Census, U.S. Department of Commerce, 1978.

Comparability of Data. Data obtained from the CPS and other sources are not entirely comparable. This results from differences in interviewer training and experience and in differing survey processes. This is an example of nonsampling variability not reflected in the standard errors. Use caution when comparing results from different sources.

Caution should also be used when comparing estimates in this report (which reflect 1980 census-based population controls) with estimates for 1980 and earlier years (which reflect 1970 census-based population controls). This change in population controls had relatively little impact on summary measures such as means, medians, and percent distributions. It did have a significant impact on levels. For example, use of 1980-based population controls results in about a 2-percent increase in the civilian noninstitutional population and in the number of families and households. Thus, estimates of levels for data collected in 1981 and later years will differ from those for earlier years by more than what

could be attributed to actual changes in the population. These differences could be disproportionately greater for certain subpopulation groups than for the total population.

Since no independent population control totals for persons of Hispanic origin were used before 1985, compare Hispanic estimates over time cautiously.

Note When Using Small Estimates. Summary measures (such as medians and percentage distributions) are shown only when the base is 75,000 or greater. Because of the large standard errors involved, summary measures would probably not reveal useful information when computed on a smaller base. However, estimated numbers are shown even though the relative standard errors of these numbers are larger than those for corresponding percentages. These smaller estimates permit combinations of the categories to suit data users' needs. These estimates may not be reliable for the interpretation of small differences. For instance, even a small amount of nonsampling error can cause a borderline difference to appear significant or not, thus distorting a seemingly valid hypothesis test.

Sampling Variability. Sampling variability is variation that occurred by chance because a sample was surveyed rather than the entire population. Standard errors, as calculated by methods described next, are primarily measures of sampling variability, although they may include some nonsampling errors.

Standard Errors and Their Use. A number of approximations are required to derive, at a moderate cost, standard errors applicable to all the estimates in this report. Instead of providing an individual standard error for each estimate, generalized sets of standard errors are provided for various types of characteristics. Thus, the tables show levels of magnitude of standard errors rather than the precise standard errors.

Table 1 provides standard errors of estimated numbers. Tables 2 and 3 provide standard errors of estimated percentages. Table 4 has standard error parameters for persons, families, households, householders, and unrelated individuals. Table 4 also provides factors to apply to the standard errors in tables 1 through 3.

The sample estimate and its standard error enable one to construct a confidence interval. A confidence interval is a range that would include the average result of all possible samples with a known probability. For example, if all possible samples were surveyed under essentially the same general conditions and using the same sample design, and if an estimate and its standard error were calculated from each sample, then approximately 90 percent of the intervals from 1.645 standard errors below the estimate to 1.645 standard errors above the estimate would include the average result of all possible samples.

A particular confidence interval may or may not contain the average estimate derived from all possible samples. However, one can say with specified confidence that the interval includes the average estimate calculated from all possible samples.

Some statements in the report may contain estimates followed by a number in parentheses. This number can be added to and subtracted from the estimate to calculate upper and lower bounds of the 90-percent confidence interval. For example, if a statement contains the phrase "grew by 1.7 percent (± 1.0)," the 90-percent confidence interval for the estimate, 1.7 percent, is 0.7 percent to 2.7 percent.

Standard errors may be used to perform hypothesis testing. This is a procedure for distinguishing between population parameters using sample estimates. The most common type of hypothesis appearing in this report is that the population parameters are different. An example of this would be comparing Whites with Blacks.

Tests may be performed at various levels of significance. The significance level of a test is the probability of concluding that the characteristics are different when, in fact, they are the same. All statements of comparison in the text have passed a hypothesis test at the 0.10 level of significance or better. This means that the absolute value of the estimated difference between characteristics is greater than or equal to 1.645 times the standard error of the difference.

Standard Errors of Estimated Numbers. There are two ways to compute the approximate standard error, s_x , of an estimated number shown in this report. The first uses the formula

$$s_x = fs \tag{1}$$

Table 1. Standard Errors of Estimated Numbers: Living Arrangements —Total or White

(Numbers in thousands)

Size of estimate	Standard error
25	11
50	15
100	22
250	35
500	49
1,000	69
2,500	109
5,000	153
10,000	213
25,000	322
50,000	417
75,000	461
100,000	467
125,000	438
150,000	364

Note: Apply the square root of the factors in table 4 to the above standard errors for other characteristics.

where f is a factor from table 4, and s is the standard error of the estimate obtained by interpolation from table 1. The second method uses formula (2), from which the standard errors in table 1 were calculated. This formula will provide more accurate results than formula (1).

$$s_x = \sqrt{ax^2 + bx} \tag{2}$$

Here, x is the size of the estimate and a and b are the parameters in table 4 associated with the particular type of characteristic. When calculating standard errors for numbers from cross-tabulations involving different characteristics, use the factor or set of parameters for the characteristic that will give the largest standard error.

Illustration

Suppose that 46,503,000 children under 18 years lived with two parents. Use the appropriate parameters from table 4 and formula (2) to get

Number, x	46,503,000
a parameter	-0.000026
b parameter	4,785
Standard error	408,000
90% conf. int.	45,832,000 to 47,174,000

The standard error is calculated as

$$s_x = \sqrt{-0.000026 \times 46,503,000^2 + 4,785 \times 46,503,000} = 408,000$$

The 90-percent confidence interval is calculated as 46,503,000 \pm 1.645 \times 408,000.

A conclusion that the average estimate derived from all possible samples lies within a range computed in this way would be correct for roughly 90 percent of all possible samples.

The alternate calculation of the standard error, using formula (1) with $f = 1.0$ from table 4 and $s = 404,000$ by interpolation from table 1, is

$$s_x = 1.0 \times 404,000 = 404,000$$

Standard Errors of Estimated Percentages. The reliability of an estimated percentage, computed using sample data for both numerator and denominator, depends on the size of the percentage and its base. Estimated percentages are relatively more reliable than the corresponding estimates of the numerators of the percentages, particularly if the percentages are 50 percent or more. When the numerator and denominator of the percentage are in different categories, use the factor or parameter from table 4 indicated by the numerator.

The approximate standard error, $s_{x,p}$, of an estimated percentage can be obtained by use of the formula

$$s_{x,p} = fs \tag{3}$$

In this formula, f is the appropriate factor from table 4, and s is the standard error of the estimate obtained by interpolation from table 2 or table 3.

Alternatively, formula (4) will provide more accurate results:

$$s_{x,p} = \sqrt{(b/x) p (100-p)} \tag{4}$$

Here, x is the total number of persons, families, households, or unrelated individuals in the base of the percentage, p is the percentage ($0 \leq p \leq 100$), and b is the parameter in table 4 associated with the characteristic in the numerator of the percentage.

Illustration

Suppose that of a total of 39,732,000 White children under 18 years, 83.0 percent lived with their biological parents. Use the appropriate parameter from table 4 and formula (4) to get

Percentage, p	83.0
Base, x	39,732,000
b parameter	4,785
Standard error	0.4
90% conf. int.	82.3 to 83.7

The standard error is calculated as

$$s_{x,p} = \sqrt{\frac{4,785}{39,732,000} \times 83.0 \times (100.0 - 83.0)} = 0.4$$

The 90-percent confidence interval for the percentage of White children under 18 years who lived with their biological parents is calculated as 83.0 \pm 1.645 \times 0.4.

The alternate calculation of the standard error, using formula (3), with $f = 1.0$ from table 4 and $s = 0.4$ by interpolation from table 2, is

$$s_{x,p} = 1.0 \times 0.4 = 0.4$$

Standard Error of a Difference. The standard error of the difference between two sample estimates is approximately equal to

$$s_{x-y} = \sqrt{s_x^2 + s_y^2} \tag{5}$$

where s_x and s_y are the standard errors of the estimates, x and y . The estimates can be numbers, percentages, ratios, etc. This will represent the actual standard error quite accurately for the difference between estimates of the same characteristic in two different areas, or for the difference between separate and uncorrelated characteristics in the same area. However, if there is a high positive (negative) correlation between the two characteristics, the formula will overestimate (underestimate) the true standard error.

Table 2. Standard Errors of Estimated Percentages: Living Arrangements—Total or White

Base of estimated percentage (thousands)	Estimated percentage						
	1 or 99	2 or 98	5 or 95	10 or 90	25 or 75	35 or 65	50
25.....	4.4	6.1	9.5	13.1	18.9	20.9	21.9
50.....	3.1	4.3	6.7	9.3	13.4	14.8	15.5
100.....	2.2	3.1	4.8	6.6	9.5	10.4	10.9
250.....	1.4	1.9	3.0	4.2	6.0	6.6	6.9
500.....	1.0	1.4	2.1	2.9	4.2	4.7	4.9
1,000.....	0.7	1.0	1.5	2.1	3.0	3.3	3.5
2,500.....	0.4	0.6	1.0	1.3	1.9	2.1	2.2
5,000.....	0.3	0.4	0.7	0.9	1.3	1.5	1.6
10,000.....	0.2	0.3	0.5	0.7	1.0	1.0	1.1
25,000.....	0.14	0.2	0.3	0.4	0.6	0.7	0.7
50,000.....	0.10	0.14	0.2	0.3	0.4	0.5	0.5
75,000.....	0.08	0.11	0.2	0.2	0.4	0.4	0.4
100,000.....	0.07	0.10	0.2	0.2	0.3	0.3	0.4
125,000.....	0.06	0.09	0.13	0.2	0.3	0.3	0.3
150,000.....	0.06	0.08	0.12	0.2	0.2	0.3	0.3

Note: Apply the square root of the factors in table 4 to the above standard errors for other characteristics.

Table 3. Standard Errors of Estimated Percentages: Women—Total or White

Base of estimated percentage (thousands)	Estimated percentage						
	1 or 99	2 or 98	5 or 95	10 or 90	25 or 75	35 or 65	50
25.....	2.8	4.0	6.2	8.6	12.3	13.6	14.2
50.....	2.0	2.8	4.4	6.0	8.7	9.6	10.1
100.....	1.4	2.0	3.1	4.3	6.2	6.8	7.1
250.....	0.9	1.3	2.0	2.7	3.9	4.3	4.5
500.....	0.6	0.9	1.4	1.9	2.8	3.0	3.2
1,000.....	0.4	0.6	1.0	1.4	2.0	2.2	2.2
2,500.....	0.3	0.4	0.6	0.8	1.2	1.4	1.4
5,000.....	0.2	0.3	0.4	0.6	0.9	1.0	1.0
10,000.....	0.14	0.2	0.3	0.4	0.6	0.7	0.7
25,000.....	0.09	0.13	0.2	0.3	0.4	0.4	0.4
50,000.....	0.06	0.09	0.14	0.2	0.3	0.3	0.3

Note: Apply the square root of the factors in table 4 to the above standard errors for other characteristics.

Table 4. Parameters and Factors for the Report: Marriage, Divorce, and Remarriage in the 1990's

Characteristic	Persons			Families		
	a	b	f	a	b	f
Living Arrangements						
Total or White.....	-0.000026	4,785	1.00	-0.000011	1,899	0.40
Black.....	-0.000283	6,864	1.43	-0.000071	1,716	0.36
Hispanic.....	-0.000567	6,864	1.43	-0.000142	1,716	0.36
Number of Women						
Total or White.....	-0.000038	2,030	1.00	(X)	(X)	(X)
Black.....	-0.000279	2,030	1.00	(X)	(X)	(X)
Hispanic.....	-0.000280	3,422	1.69	(X)	(X)	(X)

X Not applicable.

Note: Apply the factors 0.94, 0.84, 0.73, and 0.73 to the above parameters for data from 1985, 1980, 1975, and 1970.

Illustration

Suppose that 32,975,000 White children under 18 years lived with their biological parents and 2,336,000 Black children under 18 years lived with their biological parents. Use the appropriate parameters from table 4 and formulas (2) and (5) to get

	x	y	difference
Number	32,975,000	2,336,000	30,639,000
a parameter	-0.000026	-0.000283	-
b parameter	4,785	6,864	-
Standard error	360,000	120,000	379,000
90% conf. int.	32,383,000	2,139,000	30,016,000
to	33,567,000	2,533,000	31,262,000

The standard error of the difference is calculated as

$$s_{x-y} = \sqrt{360,000^2 + 120,000^2} = 379,000$$

The 90-percent confidence interval around the difference is calculated as 30,639,000 ± 1.645 x 379,000. Since this interval does not contain zero, we can conclude, at the 10-percent significance level, that the number of White children under 18 years who lived with their biological parents is greater than the number of Black children who lived with their biological parents.

Standard Error of a Mean for Grouped Data. The formula used to estimate the standard error of a mean for grouped data is

$$s_{\bar{x}} = \sqrt{(b/y) s^2} \tag{6}$$

In this formula, y is the size of the base of the distribution and b is a parameter from table 4. The variance, s², is given by the following formula:

$$s^2 = \sum_{i=1}^c p_i \bar{x}_i - \bar{x}^2 \tag{7}$$

where,

\bar{x} , the mean of the distribution, is estimated by

$$\bar{x} = \sum_{i=1}^c p_i \bar{x}_i \tag{8}$$

c is the number of groups; i indicates a specific group, thus taking on values 1 through c.

p_i is the estimated proportion of households, families or persons whose values, for the characteristic (x-values) being considered, fall in group i.

\bar{x}_i is (Z_{i-1} + Z_i)/2 where Z_{i-1} and Z_i are the lower and upper interval boundaries, respectively, for group i.

\bar{x}_c is assumed to be the most representative value for the characteristic for households, families, and unrelated individuals or persons in group i. Group c is open-ended, i.e., no upper interval boundary exists. For this group the approximate average value is

$$\bar{x}_c = \frac{3}{2} Z_{c-1} \tag{9}$$

Standard Error of a Ratio. Certain estimates may be calculated as the ratio of two numbers. The standard error of a ratio, x/y, may be computed using

$$s_{x/y} = \frac{x}{y} \sqrt{\left[\frac{s_x}{x}\right]^2 + \left[\frac{s_y}{y}\right]^2 - 2r \frac{s_x s_y}{x y}} \tag{10}$$

The standard error of the numerator, s_x, and that of the denominator, s_y, may be calculated using formulas described earlier. In formula (10), r represents the correlation between the numerator and the denominator of the estimate.

For one type of ratio, the denominator is a count of families or households and the numerator is a count of persons in those families or households with a certain characteristic. If there is at least one person with the characteristic in every family or household, use 0.7 as an estimate of r. An example of this type is the mean number of children per family with children.

For all other types of ratios, r is assumed to be zero. If r is actually positive (negative), then this procedure will provide an overestimate (underestimate) of the standard error of the ratio. Examples of this type are the mean number of children per family and the poverty rate.

NOTE: For estimates expressed as the ratio of x per 100 y or x per 1,000 y, multiply formula (10) by 100 or 1,000, respectively, to obtain the standard error.

Illustration

Suppose the ratio of male movers from abroad, x, to female movers from abroad, y, is 1.28. Use the appropriate parameters from table 4 (7,130 is from another report). The standard error of this ratio is calculated as follows:

	x	y	ratio
Estimate	641,000	501,000	1.28
a parameter	-0.000025	-0.000025	-
b parameter	7,130	7,130	-
Standard error	68,000	60,000	0.20
90% conf. int.	-	-	0.95 to 1.61

Using formula (10) with r = 0, the estimate of the standard error is

$$s_{x/y} = \frac{641,000}{501,000} \sqrt{\left[\frac{68,000}{641,000}\right]^2 + \left[\frac{60,000}{501,000}\right]^2} = 0.20$$

The 90-percent confidence interval is calculated as 1.28 ± 1.645 x 0.20.

Standard Error of a Median. The sampling variability of an estimated median depends on the form of the distribution and the size of the base. One can approximate the reliability of an estimated median by determining a confidence interval about it. (See the section on standard errors and their use for a general discussion of confidence intervals.)

Estimate the 68-percent confidence limits of a median based on sample data using the following procedure.

1. Determine, using formula (4), the standard error of the estimate of 50 percent from the distribution.

- Add to and subtract from 50 percent the standard error determined in step 1.
- Using the distribution of the characteristic, determine upper and lower limits of the 68-percent confidence interval by calculating values corresponding to the two points established in step 2.

Use the following formula to calculate the upper and lower limits.

$$X_{pN} = \frac{pN - N_1}{N_2 - N_1} (A_2 - A_1) + A_1 \quad (11)$$

where

X_{pN} = estimated upper and lower bounds for the confidence interval ($0 \leq p \leq 1$). For purposes of calculating the confidence interval, p takes on the values determined in step 2. Note that X_{pN} estimates the median when $p = 0.50$.

N = for *distribution of numbers*: the total number of units (persons, households, etc.) for the characteristic in the distribution.

= for *distribution of percentages*: the value 1.0.

p = the values obtained in step 2.

A_1, A_2 = the lower and upper bounds, respectively, of the interval containing X_{pN} .

N_1, N_2 = for *distribution of numbers*: the estimated number of units (persons, households, etc.) with values of the characteristic greater than or equal to A_1 and A_2 , respectively.

= for *distribution of percentages*: the estimated percentage of units (persons, households, etc.) having values of the characteristic greater than or equal to A_1 and A_2 , respectively.

- Divide the difference between the two points determined in step 3 by 2 to obtain the standard error of the median.

Illustration

A recent report by the Bureau of the Census¹ shows the following distribution and median income for families in 1989.

Income levels	Families
Total	66,090
Under \$5,000	2,398
\$5,000 to \$9,999	4,141
\$10,000 to \$14,999	5,354
\$15,000 to \$19,999	5,565
\$20,000 to \$24,999	5,461
\$25,000 to \$29,999	5,576
\$30,000 to \$34,999	5,294
\$35,000 to \$39,999	4,959
\$40,000 to \$44,999	4,464
\$45,000 to \$49,999	3,689
\$50,000 to \$54,999	3,545
\$55,000 to \$59,999	2,595
\$60,000 to \$64,999	2,278
\$65,000 to \$69,999	1,839
\$70,000 to \$74,999	1,463
\$75,000 to \$79,999	1,251
\$80,000 to \$84,999	1,036
\$85,000 to \$89,999	774
\$90,000 to \$94,999	695
\$95,000 to \$99,999	518
\$100,000 and over	3,197
Median income	\$34,213

- Using formula (4) with $b = 2,058$, the standard error of 50 percent on a base of 66,090,000 is about 0.3 percent.
- To obtain a 68-percent confidence interval on an estimated median, add to and subtract from 50 percent the standard error found in step 1. This yields percent limits of 49.7 and 50.3.
- The lower and upper limits for the interval in which the median falls are \$30,000 and \$35,000, respectively.

Then, by addition, the estimated numbers of families with an income greater than or equal to \$30,000 and \$35,000 are 37,597,000 and 32,303,000, respectively.

Using formula (11), the upper limit for the confidence interval of the median is found to be about

$$\frac{0.497 \times 66,090,000 - 37,597,000}{32,303,000 - 37,597,000} \times (35,000 - 30,000) + 30,000 = 34,500$$

Similarly, the lower limit is found to be about

$$\frac{0.503 \times 66,090,000 - 37,597,000}{32,303,000 - 37,597,000} \times (35,000 - 30,000) + 30,000 = 34,100$$

Thus, a 68-percent confidence interval for the median income for families is from \$34,100 to \$34,500.

- The standard error of the median is, therefore,

$$\frac{34,500 - 34,100}{2} = 200$$

¹U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 168, *Money Income and Poverty Status in the United States: 1989 (Advance Data from the March 1990 Current Population Survey)* U.S. Government Printing Office, Washington, DC, 1990.

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