Paternal Orphans

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UNDER CONDITIONS prevailing from 1922 to 1940, more than 350,000 children lost their fathers each year by death. By the time they reached their eighteenth birthday, nearly 15 percent of the children who lived to that age had become paternal orphans.[1] This volume of orphanhood indexes complex needs for assistance and special services which arise from family disorganization.[2] From the viewpoint of the social security programs, the number of paternal orphans measures the need for survivor benefits and the largest category of children who may need aid to dependent children.

Paternal Orphans in 1940

The determination of the number of paternal orphans of all ages under 18 is a somewhat complex problem because the census makes no direct count of such persons and does not record the number of dependents of deceased males. It is possible, however, to estimate the number of children who survive their fathers up to each birthday by the use of life tables and the application of the derived death rates to the actual number of births for each of the previous 18 years.[3] Table 1 presents these estimates for 1940. Column 1 shows the age of the child; column 2, the proportion of fathers dying during each year following the child's birth; column 3, the proportion dying between the birth of the child and the given anniversary of the child's birth; column 4, the proportion of surviving fatherless children at each age up to

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[1] As used in this article, a paternal orphan is one who survives his father, regardless of his subsequent legal custody.

[2] Cf. Lotka, A. J., "Orphanhood in Relation to Demographic Factors," *Metron*, Vol. 9, p. 3; and Spiegelman, M. J., "The Broken Family, Widowhood and Orphanhood," *Annals of the American Academy of Political and Social Science*, November 1936.

[3] In some respects such calculations are subject to less error than an actual enumeration for the reason that, when a family head is questioned as to the number of his children, biological and legal parentage may be confused and his answer may include both his own children and those acquired by marriage or adoption.

the eighteenth birthday; column 5, the year of birth of children of the given age in 1940; column 6, the actual number of births corrected for under-registration; and column 7 (the product of columns 4 and 6), the estimated number of paternal orphans surviving to each age in 1940. This count yields an estimate of more than 3.3 million at that time, or over 8 percent of the total number of children under age 18 who were enumerated by the 1940 census.

It is also possible to estimate from the 1940 census data the approximate distribution of the 3.3 million orphans by relationship to the head of the family. This distribution is as follows:

Head of family	Number of orphans
Female:	
Widow	1,950,000
Other	150,000
Male:	
Stepfather	900,000
Grandfather or other relative	150,000
Not in private families (institutions, servants, and lodgers)	150,000

Duration of Orphanhood

It is apparent from the rapidity with which orphans increase in number in the ages from 13 to 18 that this is a most critical age with respect to the risk of losing a father. In fact, slightly more than one-third of the paternal orphans in 1940 were in their sixteenth, seventeenth, and eighteenth years. For this reason, the average age when orphanhood occurs does not fall in the middle of childhood (age 9) but is actually at age 10.1. This being the case, the average orphan who survives would have 8 years between the loss of the father and attainment of the eighteenth birthday. The reduction by probable deaths of children between 10 and 18 decreases the expected duration of orphanhood to about 7.8 years.

Since the average age of fathers, 1922–39, was 32 years when children were born, the average age of fathers at death was 42 years. This is manifestly too early in life either to have attained maximum earning capacity or to have accumulated an adequate estate for the support of survivors.

Future Trends

The projection of the number of orphans up to 1945 and for 5 or 10

Table 1.—*Paternal orphans in 1940*

Child's age at next birthday [1]	Number of fathers dying [2] (per 100,000 at child's age 0)		Number of children surviving fathers (per 100,000 fathers at child's age 0)	Year of birth	Number of births during specified calendar year [3]	Number of paternal orphans surviving in 1940 at age indicated in col. 1 (col. 4 × col. 6)
	During year indicated in col. 1	By end of year indicated in col. 1				
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	634	634	592	1939	2,427,000	14,368
2	658	1,292	1,200	1938	2,448,000	29,376
3	682	1,974	1,829	1937	2,358,000	43,127
4	706	2,680	2,478	1936	2,330,000	57,737
5	735	3,415	3,140	1935	2,359,000	74,073
6	765	4,180	3,841	1934	2,373,000	91,148
7	797	4,977	4,563	1933	2,278,000	103,945
8	830	5,807	5,313	1932	2,400,000	127,512
9	867	6,674	6,097	1931	2,460,000	149,986
10	905	7,579	6,912	1930	2,565,000	177,293
11	944	8,523	7,775	1929	2,525,000	196,319
12	985	9,508	8,652	1928	2,612,000	225,990
13	1,030	10,538	9,555	1927	2,733,000	261,236
14	1,077	11,615	10,524	1926	2,767,000	291,199
15	1,125	12,740	11,530	1925	2,829,000	326,184
16	1,174	13,914	12,564	1924	2,893,000	363,477
17	1,233	15,147	13,647	1923	2,823,000	385,255
18	1,280	16,427	14,768	1922	2,792,000	412,323

[1] Average age at birthday following January 1940.

[2] Mortality rates 1929–31; white male rate weighted by 7, Negro male rate by 1 (basis, 1 father for each birth).

[3] Vital statistics, U. S. Census, corrected for under-registration.

Average of col. 2 = Percent of fathers dying each year (.91).

Average of col. 2 weighted by col. 1 = Theoretical average age of children when fathers die (10.1).

Average of col. 4 = Theoretical percent of children born who become orphans (6.8).

Average of col. 4 weighted by col. 1 = Theoretical age of orphans when enumerated.

Average of col. 7 weighted by col. 1 = Actual age of orphans when enumerated in 1940.

Total of col. 7 = Total paternal orphans, 3,330,548.

The application of theoretical measures assumes an equal number of births each year. Actual measures are derived by application of probabilities to actual number of births.

Table 2.—*Paternal orphans in 1945, 1950, and 1955* [1]

Child's age at next birthday	1945 [2]		1950 [3]		1955 [3]	
	Number of births, 1927–44	Number of paternal orphans	Number of births, 1932–49	Number of paternal orphans	Number of births, 1937–54	Number of paternal orphans
Total		2,782,451		2,513,103		2,658,111
1	2,990,000	15,039	2,510,000	10,868	2,430,000	10,522
2	3,140,000	32,875	2,530,000	22,315	2,440,000	21,521
3	3,030,000	51,328	2,550,000	34,629	2,450,000	33,271
4	2,722,000	59,067	2,650,000	48,878	2,470,000	45,744
5	2,554,000	70,669	2,750,000	65,230	2,490,000	59,628
6	2,427,000	82,081	2,990,000	87,248	2,510,000	73,242
7	2,448,000	98,165	3,140,000	109,837	2,530,000	88,499
8	2,358,000	110,410	3,030,000	124,442	2,550,000	104,728
9	2,330,000	125,477	2,722,000	129,929	2,650,000	125,875
10	2,359,000	143,594	2,554,000	138,708	2,750,000	149,353
11	2,373,000	163,262	2,427,000	149,528	2,990,000	184,214
12	2,278,000	174,902	2,448,000	169,255	3,140,000	217,100
13	2,400,000	204,240	2,358,000	185,674	3,030,000	234,734
14	2,460,000	233,404	2,330,000	200,520	2,722,000	234,145
15	2,565,000	264,964	2,359,000	224,623	2,554,000	243,192
16	2,525,000	285,350	2,373,000	248,880	2,427,000	254,544
17	2,612,000	302,059	2,278,000	261,651	2,448,000	281,177
18	2,733,000	365,565	2,400,000	300,888	2,358,000	296,622

[1] Estimated on the assumption that all fathers had remained in civilian life.

[2] Mortality rates 1930–39.

[3] 1939–41 mortality rates were used. It was assumed that the prewar trend in births would be resumed in 1948–54 and that improvement in adult male mortality would be offset by increased age of postwar fathers and increased proportion of children surviving.

years thereafter may be estimated with reasonable accuracy because the children who will be aged 10 to 18 in 1955 have already been born and assumptions need be made with respect only to birth rates and death rates from 1945 to 1955, which affect the children who will be in the younger ages in 1955 and will contribute a smaller proportion of the orphans. These projections have been made with allowance for improvement in mortality rates and for the reduction in average age of fathers because of the younger wartime marriages and with the assumption that the postwar birth rates will return to the slightly declining trend predicted by Thompson and Whelpton under their medium fertility estimates. Table 2 shows these projections up to 1955, without allowance for orphans from military casualties. Children orphaned by military deaths are not all net additions to the orphan population since some of these children would have lost their fathers from natural causes in civilian life.

The number of orphans was probably at a peak in 1940, although the proportion of orphans in the total child population was lower than in previous years. Both the number and proportion of orphans decline after 1940 because mortality is improving and the upper teen ages in 1940 included the unusually large numbers of children born from 1922 through 1926. From 1940 to 1944 this large group passed their eighteenth birthday, and the equally large number of war babies born from 1940 through 1944 had fathers who were still young and, except for the war risk excluded from this estimate, had had a shorter exposure to death at improved death rates. Hence the number of orphans drops to 2.8 million in 1945 and 2.5 million in 1950. By 1955, however, there will be a slight rise to 2.7 million because of the fact that the large numbers of war babies of the early 1940's will then have reached their late teens, when their fathers have been exposed to death for a number of years. This factor will persist up to about 1960, when the number of fatherless children may again approximate 3 million.

When the effects of the unusually large number of war births have been eliminated from the population—by 1965—the number of orphans will slowly decline from a level of about 2.5 million.

The pronounced decline in number of orphans from 1940 to 1945 (a decrease of 16 percent) suggests that this has been one of the primary factors in the decrease in the number of children receiving aid to dependent children. Since the force of this factor is weakening and since an actual increase in number of paternal orphans will probably occur from 1950 to 1965, it can be expected that more fatherless children will appear in this category if other factors remain the same. One offsetting condition will be the inevitable increase in the number of fatherless children who are entitled to survivor benefits under old-age and survivors insurance; in June 1945 there were 360,000.

Factors Affecting the Estimates

The estimates would be affected in varying degrees by different selection of mortality rates. In these estimates, life tables of a date just below the middle of the span of children's births have been used because of the shape of the trend of annual mortality.[4]

The use of death rates among the married population, rather than general mortality rates, would cause some reduction in the estimates. Such rates were not used, however, for two reasons: (1) satisfactory tables are not available for years prior to 1940; (2) a reduction from such rates would be more than offset by the correlation between high birth and death rates and low incomes. If it were possible to obtain reliable birth and death rates by socio-economic status, the correlation of high birth rate and high death rate with low income would probably result in a greater number of orphans in the low-income families and increase the estimate of the total number.

[4] Somewhat greater accuracy could be obtained by the use of single-year or generation mortality rates.