

## The Demography of the Unrelated Individual: 1900–1950

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This article is an analysis of the frequency and characteristics of unrelated individuals between 1900 and 1950. The much-heralded rise of the primary individual during the 20th century has been offset by a decline in the frequency of secondary individuals. The overall percentage of persons residing without family did not exceed turn-of-the-century levels until the 1970s. Using data from national microdata samples of the census for 1900, 1940, and 1950, the study applies decomposition techniques and life-course analysis to investigate these patterns. The results show that the decline of the secondary individual from 1900 to 1950 was largely a function of changing demographic composition, but the increase of primary individuals is linked to changing residential preferences.

The proportion of Americans residing as household heads without family has increased almost 600 percent since the turn of the century. Demographers have devoted considerable discussion to this rise of the primary individual (Beresford and Rivlin, 1966; Carliner, 1975; Chevan and Korson, 1972; Goldscheider and DaVanzo, 1985; Kobrin, 1973, 1976a,b; Kuznets, 1978; Michael, Fuchs, and Scott, 1980; Pampel, 1983; Richards, White, and Tsui, 1987; Sweet, 1972, 1984). They have been much less concerned with secondary individuals, defined as those people residing without family who are not heads of households or inmates of institutions. Secondary individuals are mostly reported as boarders, lodgers, roommates, servants, or persons in group quarters, such as military barracks.

During the same period that the percentage of primary individuals increased, the percentage of secondary individuals declined. Table 1 shows the changes in the percentage of persons over 14 residing as primary and secondary individuals from 1900 to 1970.<sup>1</sup> Over the period as a whole, the rise of the primary individual was more than offset by the decrease in secondaries. The percentage of unrelated individuals—defined as persons residing as either primary or secondary individuals—actually declined until 1960 and only partially recovered by 1970.

This article is an investigation of the changes in the unrelated population between 1900 and 1950, with particular attention to the shift from secondary to primary individuals. The analysis is based on data from three recently released public-use microdata samples: the 1/750 sample of the 1900 census (Graham, 1979) and 1/1000 samples for 1940 and 1950 (U.S. Bureau of the Census, 1984a,b). At this writing, these are the only national census files available for the first half of the century.

Most demographic analyses of the rise of the primary individual have started with data from 1950 or 1960. The study of secondary individuals, by contrast, has largely been carried out by historians using late 19th-century data (Anderson, 1971; Katz, 1975; Modell and Hareven, 1973). By looking at the period from 1900 to 1950 and focusing on the change

Table 1. Living Arrangements of Persons Over 14, 1900–1970 (%)

Living arrangement	1900	1940	1950 <sup>a</sup>	1960 <sup>b</sup>	1970 <sup>b</sup>
Unrelated individuals	13.69	9.92	10.56	9.38	11.26
Primary individuals	2.29	3.55	4.73	6.24	8.19
Secondary individuals	11.40	6.37	5.83	3.14	3.07
Institutionalized	0.83	1.58	1.31	1.41	1.34
In families	85.39	88.50	88.13	89.21	87.40

Sources: 1900–1950, Public Use Samples; 1960–1970, Current Population Surveys; and U.S. Bureau of the Census (1964:Table B, 1973:Table 1).

<sup>a</sup> Adjusted to reflect different treatment of college students (see the Appendix).

<sup>b</sup> Adjusted to include persons in military barracks.

from secondary to primary individuals, I hope to provide a link between the demographic literature and the historical studies of unrelated individuals.

The analysis addresses four issues. First, I look at changes in census definitions between 1900 and 1950, to assess whether the patterns shown in Table 1 could be simply an artifact of changing measurement procedures. The second section analyzes the effects of changing population composition on the overall frequency of unrelated individuals. Third, I turn to the changing characteristics of the unrelated population and evaluate the impact of those changes on the relative frequency of primary and secondary individuals. Finally, I examine life-course residential patterns to explain the reasons for the changes in the characteristics of unrelated individuals.

### Changes in Census Definitions

Beresford and Rivlin (1966) suggested that many people who were enumerated as boarders and lodgers in the late 19th century would have been enumerated as primary individuals in 1940 or 1960 because of changes in census definitions. Accordingly, we should consider comparability issues carefully to test the hypothesis that the shift from secondary to primary individuals is merely a result of changing procedures.

In the census of 1900, all individuals were assigned to a family. A family was an individual or group of individuals who "jointly occupy" a dwelling place or part of a dwelling place. Census instructions defined dwelling places by the existence of a front door; they included both wigwams and tenement houses. Within dwelling places, the number of separate families was generally determined by the number of separate eating tables. However, there were several exceptions to this criterion. All the permanent occupants of hotels, institutions, and military barracks constituted single families, provided they slept in the same building. Census enumerators likewise counted boarders, lodgers, and servants as part of the family occupying the dwelling place where they slept, regardless of their eating arrangements. Nonpermanent residents, including hotel guests and students at schools and colleges, were enumerated at their "usual place of abode," which meant that college students in dormitories were supposed to be listed as members of their parental family.<sup>2</sup>

By 1940 the basic unit of enumeration was no longer the family; instead, there were households and quasi-households. A household consisted of the group of persons occupying a group of rooms with either separate cooking equipment or an outside entrance. A single room could qualify as a household only if it had its own cooking facilities or was the only living quarters in the structure. The maximum number of boarders and lodgers in a household was 10; when that number was exceeded, the unit was enumerated as a quasi-household. Quasi-households also included hotels, institutions, military barracks, dormitories, and the like.

The procedure in 1950 was similar to that in 1940, with two important exceptions. First, the maximum number of boarders and lodgers in households was reduced from 10 to 4; units with 5 or more boarders and lodgers became quasi-households. Second, students residing at college on census day were no longer enumerated at their parental home. The latter change significantly increased the population of secondary unrelated individuals.<sup>3</sup>

The definition of households was broadened slightly for the census of 1960 to include persons in any single room with direct access to the outside or to a common hallway, whether or not the room had its own cooking facilities. As a result, single rooms in hotels and boarding houses were more often classified as separate households. The term "group quarters" was substituted for quasi-household, but the definition remained virtually the same. Finally, in 1970 there were almost no changes from 1960, except that quarters without direct access to a common hallway were required to have "complete cooking facilities" to qualify as an independent household.<sup>4</sup>

On the whole, one would expect the changes in census definitions to have led to a decrease in the frequency of primary individuals, not to the increase that Beresford and Rivlin suggested. The greater the requirements to distinguish a separate household, the fewer unrelated individuals will be enumerated as household heads. In 1900 only a separate dining table was required to constitute a separate unit of enumeration. At the discretion of the enumerator, even this requirement might be suspended; the instructions vaguely state that separate meals were "not always" necessary. By contrast, in 1940 and 1950 the unit of enumeration was required to have a separate entrance or cooking facilities. One-room quarters in tenement houses without cooking facilities could not qualify as households under any circumstances. Moreover, the adoption of the quasi-household and group quarters classifications further reduced the potential number of primary individuals, since by definition primary individuals must be heads of households.

Insofar as it was possible, the creators of the 1940 and 1950 Public Use Samples imposed the 1970 census definitions of households and group quarters. Thus residents of quasi-households and those in households with five or more unrelated individuals were classified as persons in group quarters. The 1900 Public Use Sample does not provide sufficient information to adopt precisely consistent criteria for households and group quarters, but the categories of the 1940–1950 Public Use Samples can be roughly approximated. For 1900 I classified as residents of group quarters persons in lodging houses with 10 or more boarders, military installations, boarding schools, college dormitories, old-age homes, poorhouses, convents, homes for unwed mothers, and institutions. All other individuals in the 1900 census were considered to reside in households. By these criteria, the 1900 definition of group quarters is a subset of the 1940–1950 Public Use Sample definition, but the difference is small.

Once the 1900 sample was classified into households and group quarters, I adopted the following definitions for all three data sets: unrelated individuals are all persons residing without any relatives, except for the institutional population; primary individuals are unrelated individuals who are heads of households; and secondary individuals are all other unrelated individuals, whether they reside in households or group quarters. These are the categories that appear in Table 1.

For the 1950 sample, one additional refinement has been added. As noted previously, college students were counted at their "usual place of abode" in 1900 and 1940, but students boarding at college were enumerated there in 1950. I have therefore made a conservative adjustment of the living arrangements of college students in 1950 (see the Appendix).

### Changes in Population Composition

The overall percentage of unrelated individuals declined about 38 percent between 1900 and 1940 and then increased 9.4 percent between 1940 and 1950. During the same period, there were substantial changes in the demographic composition of the American population. To assess what would have happened if the composition of the population had remained constant, I have carried out a components of change analysis. I adopted the decomposition technique proposed by Das Gupta (1978), which is an elaboration and refinement of the methods developed by Kitagawa (1955) and Retherford and Cho (1973).

The factors incorporated in the analysis are presented in Table 2. The left side of the table shows the proportion of unrelated individuals in each category of each factor, and the proportion of the entire population falling into each category appears on the right. The

Table 2. Unrelated Individuals as a Percentage of the Population Over 14 and Frequency Distribution of the Population by Selected Factors, 1900–1950

Factor and category	% unrelated individuals			Frequency distribution of entire population		
	1900	1940	1950	1900	1940	1950
Age group						
15–19	11.6	4.3	7.7	15.1	12.5	9.3
20–24	20.4	10.6	10.1	15.0	11.5	10.2
25–29	17.9	9.1	7.3	13.1	11.3	11.2
30–34	13.7	7.9	6.2	11.3	10.5	10.6
35–39	12.2	7.9	6.7	10.1	9.5	10.1
40–44	10.3	9.2	8.0	8.5	8.9	9.3
45–49	9.3	9.5	9.8	6.9	8.2	8.4
50–54	10.4	10.3	10.5	5.7	7.5	7.7
55–59	9.4	12.6	13.4	4.4	5.9	6.7
60–64	11.5	14.7	16.0	3.6	4.9	5.4
65–69	12.8	16.4	20.6	2.6	3.9	4.5
70–74	12.4	18.9	23.1	1.9	2.7	3.1
75+	12.3	21.0	24.6	1.8	2.7	3.6
Marital status						
Single	27.3	18.0	21.0	35.9	29.6	21.2
Married	3.2	2.8	1.9	55.3	61.1	66.5
Widowed/divorced	23.6	31.0	39.4	8.8	9.3	12.3
Sex						
Male	17.1	10.5	10.9	51.3	49.9	49.2
Female	10.0	9.3	10.3	48.7	50.1	50.8
Occupation						
Bourgeois	10.0	12.1	10.7	20.6	21.9	24.2
Skilled	18.5	9.0	9.1	13.1	15.5	19.3
Unskilled	32.6	21.1	19.4	20.8	15.3	11.3
No answer*	5.3	5.6	8.9	45.5	47.3	45.2
Mobility						
Immigrant	20.1	13.0	14.3	20.3	12.9	9.6
Internal	17.2	14.7	14.2	22.6	24.4	29.1
Nonmover	9.9	7.5	8.0	57.2	62.8	61.3
Total	13.7	9.9	10.6	100.0	100.0	100.0
N in sample	8,895	9,573	11,833	65,136	96,489	112,075

\* Includes missing data and nonoccupational responses.

factors are age, sex and marital status, occupational status, and geographic mobility. The range of factors was limited to the variables consistently available across census years. Thus it was impossible to assess the effects of education, and the measures of economic status and geographic mobility are not entirely satisfactory. Moreover, the analysis also excludes relevant factors that were not included in any census year, such as housing stock and availability of kin. In spite of the limitations of these data, however, they do allow considerably more detailed analysis than has heretofore been possible.

Age is divided into 13 categories. There was a bimodal distribution of unrelated individuals with respect to age in all census years; the highest percentages occurred among persons in their early 20s and among the elderly. As I will show later, these two groups represent distinctly different residential paths. In general, the proportion of young adults residing as unrelated individuals declined between 1900 and 1950, whereas the proportion of the elderly increased. There was also considerable aging of the general population between 1900 and 1950, as shown on the right side of Table 2. Because of the bimodal distribution, this compositional change had mixed consequences for the frequency of unrelated individuals; the relative number of young adults declined, but the elderly population increased.

The same countervailing effects are apparent for marital status. I have grouped the widowed and divorced into a single category, since in 1900 the divorced accounted for fewer than 0.25 percent of the population. The unrelated population was concentrated among singles and widowed or divorced persons in all census years, and in the population as a whole, the percentage of single persons went down and the percentage of widowed or divorced persons went up during the first half of the century. There was also a substantial increase in the married population between 1900 and 1950, which would contribute to the decline of unrelated individuals. Note that the trend in the marital status of unrelated individuals was consistent with the trend in their age structure described earlier.

The sex ratio of the general population changed only slightly between 1900 and 1950, but gender is nonetheless a relevant variable. Among the elderly and the widowed or divorced—groups increasingly likely to reside as unrelated individuals—women were overrepresented. In 1900, when unrelated individuals were usually young and single, men were 70 percent more likely than women to be unrelated individuals; by 1950, the proportions of men and women were almost the same.

The third factor—occupational status—represents a crude attempt to assess the impact of changes in the economic resources of the population. Much of the literature on primary individuals and persons living alone has been concerned with the extent to which increased income allowed people to reside without family (see especially Michael, Fuchs, and Scott, 1980; Pampel, 1983). Unfortunately, data on income were not gathered by the census until 1940, so I was forced to rely on the occupational variable. At best, occupation is a rough indicator of economic status, and when making comparisons across half a century, one must use great caution. Frequently, occupational titles are not directly comparable between 1900 and the later years. Even when the same job title is found across census years, there is no guarantee that it represents the same position in the economic hierarchy. The only safe course is to limit the analysis to broad categories of occupations.<sup>5</sup>

The breakdown of unrelated individuals according to the three-category occupational hierarchy in Table 2 shows that between 1900 and 1950 residence as an unrelated individual was associated with low occupational status. In all census years, the highest proportion of unrelated individuals was to be found among the unskilled workers, although the strength of this pattern diminished over time. Thus if all else were held constant, the increase in the proportion of the population with high occupational status would have contributed to a *decline* in the frequency of unrelated individuals.

Geographic mobility is the final factor shown in Table 2. In general, geographic mobility is associated with residence as an unrelated individual. One might expect that the

increase of mobility, especially after the war, would have encouraged a higher frequency of unrelated individuals. But although internal migration increased, the restrictive laws of the 1920s sharply reduced the flow of immigrants. Once again, the effects of the decline in the proportion of immigrants and of the increase of internal migration tended to cancel one another out.

It is possible to measure the proportion of immigrants directly, but the censuses do not have sensitive indicators of internal migration consistently available. I therefore divided the native-born population into those who resided in their state of birth and those who did not.

The results of the components analysis are given in Table 3. The factors are defined exactly as shown in Table 2. The absolute percentage differences between years are decomposed on the left of the table; following the suggestion of Kitagawa (1964), I have also expressed the components of change as index numbers. The overall differences between census years are not identical to those shown in Tables 1 and 2 because of missing data. In addition, it was necessary to exclude a few cells from the analysis because they were empty in one or another of the data sets; altogether, however, only about 0.1 percent of the total cases were excluded on these grounds.

Table 3. Components of Change in the Frequency of Unrelated Individuals: Persons Over 14, 1900–1950

Item	Components of change	Index of change
<b>A. Change From 1900 to 1950</b>		
Total change	–3.24	100.0
Effects of factors		
Age	0.51	–15.8
Sex and marital status	–1.63	50.2
Occupation	–0.51	15.9
Mobility	–0.56	17.2
Combined effect of factors	–2.19	67.5
Rate effect	–1.05	32.5
<b>B. Change From 1900 to 1940</b>		
Total change	–3.66	100.0
Effects of factors		
Age	0.44	–12.0
Sex and marital status	–0.90	24.5
Occupation	–0.45	12.4
Mobility	–0.63	17.2
Combined effect of factors	–1.54	42.1
Rate effect	–2.12	57.9
<b>C. Change From 1940 to 1950</b>		
Total change	0.44	100.0
Effects of factors		
Age	0.34	77.5
Sex and marital status	–0.36	–81.4
Occupation	–0.11	–25.3
Mobility	0.10	23.9
Combined effect of factors	–0.02	–5.4
Rate effect	0.46	105.4

As expected, the various effects tend to cancel one another out. Considering the entire period of 1900–1950, compositional change can explain about two-thirds of the decline in the frequency of unrelated individuals, but in absolute terms the effects of compositional change were small. The aging of the population encouraged residence as unrelated individuals, but this effect was more than counteracted by the decline in the percentage single and the increase of the married population. As expected, increasing occupational status tended to *reduce* the overall frequency of unrelated individuals. The decline in the percentage of foreign born between 1900 and 1940 is responsible for the negative effect of the mobility factor in that interval; between 1940 and 1950 the effect was reversed by the increase of internal migration.

The rate effects shown in Table 3 estimate the change in the percentage of unrelated individuals that would have taken place if all of the factors were held constant. These figures show that there would have been a slight decline in the overall percentage of unrelated individuals between 1900 and 1940 and an even smaller increase between 1940 and 1950. In general, the frequency of unrelated individuals was only moderately affected by the compositional factors considered here. The increase of certain groups with a consistently high proportion of unrelated individuals—such as the elderly and the widowed or divorced—was counteracted by the decline of others, especially the young single population.

### Primary and Secondary Individuals

When we turn to the problem of the shift from secondary to primary unrelated individuals, the effects of compositional change are much clearer. Table 4 shows the factors incorporated in a components analysis of the change in the proportion of unrelated individuals who were heads of households. The factors included are the same as those employed in the previous components analysis, except that I have eliminated the mobility factor. Mobility was excluded because its effects were small and there was an insufficient number of cases to carry out the full analysis on the population of unrelated individuals.<sup>6</sup>

The differences between the characteristics of primary and secondary individuals were dramatic. In all periods, primary individuals were largely confined to the older age groups, and they were sixfold more often widowed or divorced than was the general population. In contrast, secondary individuals tended to be young and single; more than 90 percent of the unrelated individuals under 25 years old were secondary individuals, and secondary individuals account for between 71 and 89 percent of the unrelated singles. In addition, secondary individuals were substantially more frequent among the working class than among the bourgeoisie.

At the outset of this investigation, I suspected that the distinction between primary and secondary individuals was probably not very important; primary individuals might be in essentially similar circumstances as secondary individuals, except that they had sufficient means to maintain their own household. If this were true, then the rise of the primary individual and the decline of the secondary individual might simply have been a byproduct of increasing incomes. The striking contrast in the characteristics of the two groups shows that the process was not so simple; primary individuals and secondary individuals were distinctly different groups at different stages of the life course. This evidence discourages any attempt to explain the rise of the primary individual as a consequence of the decline of the secondary individual. Instead, we must look for separate explanations for each of the two phenomena.

The composition of the unrelated population, shown on the right of Table 4, shifted dramatically between 1900 and 1950. In 1900 almost three-quarters of the unrelated individuals were 39 years old or less; by 1950 almost half were more than 50 years old. Similarly, 72 percent of the unrelated individuals were single in 1900, compared with only

Table 4. Primary Individuals as a Percentage of Unrelated Individuals Over 14 and Frequency Distribution of Unrelated Individuals by Selected Factors, 1900–1950

Factor and category	% primary individuals			Frequency distribution of unrelated individuals		
	1900	1940	1950	1900	1940	1950
<b>Age group</b>						
15–19	2.6	2.3	2.5	12.8	5.4	6.7
20–24	6.8	8.9	9.6	22.4	12.3	9.8
25–29	9.7	16.5	25.3	17.2	10.4	7.7
30–34	13.4	24.3	28.9	11.3	8.4	6.3
35–39	17.6	32.8	36.8	9.0	7.6	6.4
40–44	26.4	35.6	42.7	6.4	8.3	7.1
45–49	27.0	37.7	50.6	4.7	7.9	7.8
50–54	32.0	44.3	50.4	4.4	7.8	7.6
55–59	44.9	48.6	58.7	3.0	7.5	8.4
60–64	47.6	53.3	61.0	3.1	7.3	8.2
65–69	50.5	64.5	66.6	2.5	6.4	8.8
70–74	56.7	65.9	72.9	1.7	5.2	6.7
75+	54.6	67.6	72.1	1.6	5.7	8.3
<b>Marital status</b>						
Single	11.7	24.5	28.3	71.8	53.8	42.2
Married	12.5	28.9	31.3	13.1	17.0	11.8
Widowed/divorced	45.1	60.5	63.4	15.1	29.1	46.0
<b>Sex</b>						
Male	16.2	31.0	35.2	64.4	52.8	50.5
Female	18.0	41.1	54.6	35.6	47.2	49.5
<b>Occupation</b>						
Bourgeois	34.6	37.3	47.4	15.1	26.8	24.6
Skilled	14.8	31.5	36.1	17.7	14.0	16.7
Unskilled	9.5	20.4	33.9	49.7	32.5	20.7
No answer*	24.6	55.0	52.9	17.5	26.7	38.0
<b>Mobility</b>						
Immigrant	15.3	37.9	51.1	29.9	16.8	13.2
Internal	19.3	34.7	39.9	28.5	36.0	39.8
Nonmover	16.3	35.9	48.0	41.7	47.2	47.1
<b>Total</b>	16.9	35.7	44.8	100.0	100.0	100.0
<b>N in sample</b>	1,500	3,422	5,301	8,895	9,573	11,833

\* Includes missing data and nonoccupational responses.

42 percent in 1950. There was also a dramatic decline in the percentage of unrelated individuals who were unskilled workers. Only part of these changes can be attributed to the shifting composition of the general population (compare Table 2).

The changes in all three of these factors—age, marital status, and occupation—increased the frequency of primary individuals and reduced the frequency of secondary individuals. As shown in Table 5, 70 percent of the shift from secondary to primary individuals can be accounted for by changes in the composition of the unrelated population. In the period from 1900 to 1940, the most important factor was the changing age structure of the unrelated population; between 1940 and 1950, the critical factor was marital status, as there was a sharp rise in the proportion of unrelated individuals who were widowed or divorced. In both time intervals, increasing occupational status contributed to the shift from



Table 5. Components of the Shift From Secondary to Primary Individuals: Unrelated Population Over 14, 1900–1950

Item	Components of change	Index of change
<b>A. Change From 1900 to 1950</b>		
Total change	28.16	100.0
Effects of factors		
Age	9.53	33.8
Marital status	6.41	22.8
Occupation	3.21	11.4
Sex	0.63	2.2
Combined effect of factors	19.78	70.2
Rate effect	8.38	29.8
<b>B. Change From 1900 to 1940</b>		
Total change	18.97	100.0
Effects of factors		
Age	7.83	41.3
Marital status	2.56	13.5
Occupation	2.97	15.7
Sex	0.08	0.4
Combined effect of factors	13.43	70.8
Rate effect	5.54	29.2
<b>C. Change From 1940 to 1950</b>		
Total change	9.13	100.0
Effects of factors		
Age	0.93	10.2
Marital status	3.75	41.1
Occupation	1.22	13.4
Sex	0.14	1.5
Combined effect of factors	6.05	66.2
Rate effect	3.09	33.8

secondary to primary individuals.

The analysis demonstrates that the rise of the primary individual and the decline of the secondary individual did not involve any substantial change in the behavior of either primary or secondary individuals. The rate effect shown in Table 5 represents the proportion of change that took place within groups of people who shared the same characteristics; the combined effect of factors represents the consequences of shifts of the population between such groups. Persons in similar circumstances generally made similar residence decisions in all three years.

In all the census years, persons who were young, single, or unskilled were likely to reside as secondary individuals; primary individuals were more likely to be older, widowed, and bourgeois. The proportion of unrelated individuals who were young, single, and unskilled declined dramatically, and the proportion who were older, widowed or divorced, and bourgeois went up. To explain the rise of the primary individual or the decline of the secondary individual, we need to explain the changes in the characteristics of the unrelated

population. The sources of these changes can be clarified by looking at the life course experience of synthetic cohorts.

### The Life Course and the Unrelated Individual

The great bulk of the unrelated individuals fall into one of two categories: first, there are young single people who have left home but who have not yet married, and second, there are widowed and divorced people who do not reside with their children or other kin. The former category consists mainly of secondary individuals, while the latter includes most of the primaries.

In this light, the age and marital status composition of the unrelated population can be viewed essentially as the product of four factors. The frequency of young, single, unrelated individuals depends on the age at which people leave home and on their age at marriage; the frequency of widowed and divorced unrelated individuals depends on the overall duration of the widowed or divorced status together with the propensity of widowed and divorced persons to reside with kin, especially extended kin.

These four factors are expressed as durations in Table 6. The left three columns show the mean years spent with and without family by sex and marital status for synthetic cohorts sharing the age-specific marital status and residential patterns of the U.S. population of 1900, 1940, and 1950. The calculation of the mean duration of a particular marital status and living arrangement is straightforward; it is the sum of the proportions in that situation at each age. The measure is analogous to a gross reproduction rate, in that it represents the experience of a hypothetical cohort with no mortality. The three central columns in Table 6 use a similar measure, except that the effects of mortality are taken into account.<sup>7</sup> The differences between the left three columns and the central three columns are analogous to the differences between a gross reproduction rate and a net reproduction rate. On the right of the table, the net years lived are expressed as percentages of life expectancy.

Looking at the problem in terms of durations has the advantage of allowing us to see the effects of changes in the timing of life-course events on the age and marital status composition of the unrelated population. The three marital statuses shown ordinarily occur in sequence: people are always single before they are married, and they are married before they are widowed or divorced. Of course, some widowed and divorced people subsequently remarry, so the sequence is not absolute. The mean years single is a function of the age at marriage or death, whichever comes first, and the mean years widowed or divorced is a function of the age at widowhood or divorce and the age at death or remarriage. The part left over—the proportion of life spent married—is a major determinant of the overall frequency of unrelated individuals in a population, because married people seldom reside as unrelated individuals.

The duration of marriage went up substantially between 1900 and 1950. Much of this change can be explained by the decline in years single that is evident in the left columns of Table 6. In addition, the rise in life expectancy extended the age at which marriages ended, as can be seen in the central three columns. The increase in time spent married reduced the potential for unrelated individuals.

The decline in years spent single was a consequence of falling age at marriage.<sup>8</sup> At the same time, there was little change in the age at which children left home, as shown by the figures on mean years spent with the family on the left side of Table 6. This meant a narrowing of the interval between leaving home and marriage and a decline in the percentage of single unrelated individuals. Taking into account the effects of changing mortality, the percentage of life spent single without a family (shown in the right three columns) dropped even more sharply.

Table 6. Years Lived Before Age 80 With Family and as Unrelated Individuals: By Sex and Marital Status, Synthetic Cohorts of 1900, 1940, and 1950

Family and marital status category	Mean gross years lived (assuming no mortality)			Mean net years lived (mortality effects included)			% of net years lived		
	1900	1940	1950	1900	1940	1950	1900	1940	1950
<b>Males</b>									
Single									
With family	24.9	26.5	24.3	18.4	23.9	22.9	41.0	39.9	35.9
Unrelated	6.4	4.2	3.6	4.0	3.0	2.8	8.8	5.0	4.4
Total	31.3	30.7	27.9	22.4	26.9	25.7	49.8	44.9	40.3
Married									
With family	39.5	40.5	43.0	19.1	28.1	32.6	42.4	46.9	51.1
Unrelated	1.5	1.4	1.1	0.8	1.0	0.8	1.7	1.7	1.3
Total	41.0	41.9	44.1	19.9	29.1	33.4	44.1	48.6	52.4
Widowed/divorced									
With family	4.6	3.5	3.3	1.5	1.7	1.9	3.3	2.8	2.9
Unrelated	2.1	2.4	3.4	0.8	1.2	2.0	1.8	2.0	3.2
Total	6.7	5.9	6.7	2.3	2.9	3.9	5.1	4.8	6.1
Institutional	1.0	1.5	1.2	0.4	1.0	0.8	0.9	1.7	1.3
Total years lived	80.0	80.0	80.0	45.0	59.9	63.8	100.0	100.0	100.0
Total years dead	—	—	—	35.0	20.1	16.2	—	—	—
<b>Females</b>									
Single									
With family	24.3	24.7	22.8	18.5	22.6	21.6	39.0	35.5	31.6
Unrelated	3.1	3.0	2.6	2.1	2.3	2.2	4.3	3.6	3.2
Total	27.4	27.7	25.4	20.6	24.9	23.8	43.3	39.1	34.8
Married									
With family	35.4	37.1	38.8	20.2	29.5	33.4	42.6	46.4	49.0
Unrelated	0.8	0.8	0.5	0.4	0.7	0.4	0.9	1.0	0.6
Total	36.2	37.9	39.3	20.6	30.2	33.8	43.5	47.4	49.6
Widowed/divorced									
With family	12.9	9.5	8.9	4.8	5.7	6.3	10.2	8.9	9.2
Unrelated	2.9	3.9	5.5	1.1	2.3	3.8	2.3	3.6	5.5
Total	15.8	13.4	14.4	5.9	8.0	10.1	12.5	12.5	14.7
Institutional	0.6	1.0	0.9	0.3	0.7	0.7	0.6	1.0	1.0
Total years lived	80.0	80.0	80.0	47.3	63.7	68.3	100.0	100.0	100.0
Total years dead	—	—	—	32.7	16.3	11.7	—	—	—

The proportion of life spent widowed or divorced was fairly stable during the first half of the century. Reduced mortality meant that spouses were less likely to die, but it also meant a longer period of survival for widows and widowers. Moreover, there was a large increase in divorce during this period.

There was nevertheless a substantial increase in the period of life spent as a widowed or divorced unrelated individual, especially among women. This shift to nonfamilial living arrangements was part of the well-documented decline of extended living arrangements among the elderly after the turn of the century.<sup>9</sup> The change in preferences was actually stronger than the figures in Table 6 reveal. In 1900, a substantial proportion of the widowed elderly did not reside with children or other near kin simply because they had none available.

The decline in mortality after 1900 increased the availability of kin in old age (De Vos and Ruggles, 1988; Ruggles, 1986).

In sum, then, the changes in the age and marital status structure of the unrelated population between 1900 and 1950 boil down to two main factors: on the one hand, decreasing age at marriage; and on the other, a declining propensity of the elderly and widowed population to reside with kin.

### Summary and Conclusion

Although the rise of the primary individual between 1900 and 1970 is a statistically flashy event, the compensating decline of the secondary individual meant that there was little overall change in the frequency of unrelated individuals.<sup>10</sup> I have argued that this shift from secondary to primary individuals was not simply a result of changing census definitions; if anything, the changes in the census should have led to a reduction of the proportion of unrelated individuals who would have been heads of household.

Compositional changes in the American population had little consequence for the overall frequency of unrelated individuals, but they did affect the characteristics of the unrelated population. And the changing characteristics of the unrelated population can account for most of the shift from secondary to primary individuals.

Throughout the first half of the century, secondary individuals were most frequently young, single, and of low economic status; for them, residence as a boarder or servant was a temporary living arrangement between leaving home and marriage. The decline in marriage age during the first half of the 20th century reduced the period during which young people resided alone. The increase of the older, widowed and divorced population of primary individuals is less amenable to compositional explanation; the overall percentage of life spent widowed or divorced increased only slightly.

In recent years the overall percentage of unrelated individuals more than 14 years old has increased significantly, from 11.3 percent in 1970 to 17.0 percent in 1986.<sup>11</sup> The largest changes in the period since 1950 have taken place among the widowed and divorced elderly. The trends of the first half of the century have continued since then. On the one hand, there is an ever-increasing propensity for the aged to reside without family; on the other, the percentage of the population over the age of 60 continues to rise.

Some of the recent increase can be traced to the young, single population. The main factor here is rising marriage age, which has recovered from its low point in the 1950s; people are now actually marrying later than they did in 1900.<sup>12</sup> But an increasing number of young people remain in college until their early 20s. If we count dependent college students as members of their parental families, then the propensity of young people to reside as unrelated individuals is now actually slightly lower than in 1900. Unlike the youth of 1900–1950, however, most now reside as primary individuals rather than as secondary individuals.

The increasing tendency for the elderly to reside as unrelated individuals is nothing new. Until recently, though, there was a countervailing trend for young people to marry earlier, so the overall frequency of unrelated individuals was relatively stable. Since 1970 living without family has become more common among both the young and the elderly. It would be a mistake, I think, to regard this as some sort of new and unified rejection of family life. The change among the elderly is a long-term phenomenon, and the change among youth may be viewed simply as a return to the marital patterns that have predominated through most of American history.

### Notes

<sup>1</sup> For a description of the construction of the figures shown in Table 1 for 1900, 1940, and 1950, see the next section and the Appendix. For 1960 and 1970 I opted to use Current Population Survey

(CPS) data rather than census data, since the treatment of college students in the CPS was comparable to the pre-1950 census. The CPS excludes persons residing in military barracks, so these were added in from the census, using figures in U.S. Bureau of the Census (1964, 1973). The figures are restricted to the population 15 years old and older because only a small percentage of children resided as unrelated individuals.

<sup>2</sup> The complete instructions to enumerators are reproduced in Barrows (1976). About 4 percent of the college-aged population was enrolled in college in 1900 (Veysey, 1965:2). Of these, only about 6 percent were listed in the census as resident in dormitories. Some students were enumerated at their dormitory because it constituted the "primary place of abode."

<sup>3</sup> The enumerator's instructions for 1940 are given in U.S. Bureau of the Census (1984a). Also see Jenkins (1983). The changes from 1940 to 1950 are detailed in U.S. Bureau of the Census (1955). On the effects of the change in the treatment of college students, see the Appendix.

<sup>4</sup> The changes from 1950 to 1970 are described in U.S. Bureau of the Census (1964, 1973).

<sup>5</sup> In terms of the broad 1950 categories, my "bourgeois" category includes the professional, technical, and kindred workers; farmers and farm managers; managers, officials, and proprietors; and clerical and sales workers. The "skilled" category includes craftsmen, foremen, and kindred workers and operatives and kindred workers. The "unskilled" category includes everyone else with an identifiable occupation. These categories are roughly comparable to those employed in Ruggles (1987).

<sup>6</sup> Changes in mobility status helped account for the changing pattern of unrelated individuals, but the effect was small (3.7 percent of the total change, 1900–1950). Incorporating mobility in the analysis, however, led to the exclusion of 4.3 percent of the cases because of the problem of empty cells, and these cases were disproportionately primary individuals. By contrast, without the mobility factor only 0.4 percent of the cases were excluded.

<sup>7</sup> The proportions in each age group and living arrangement were multiplied by the mean years lived in that age interval before summing the total. The necessary life tables were calculated from the rates given in U.S. Bureau of the Census (1975).

<sup>8</sup> The mean years spent single shown on the left of Table 6 is equivalent to the singulate mean age at marriage, except that it does not account for the population that never married. The median age at first marriage fell from 25.9 years old to 22.8 years old among men between 1900 and 1950 and from 21.9 years old to 20.3 years old among women (U.S. Bureau of the Census, 1975).

<sup>9</sup> See, for example, Smith (1979, 1981). We should not assume, however, that the rise of the primary individual among the aged represented a shift from a traditional to a modern nuclear family; as I have described elsewhere at length (Ruggles, 1987), the frequency of extended families increased two- or threefold during the 19th century. We should also be cautious about assuming an automatic relationship between increasing economic resources and the residence of the elderly as primary individuals; in the late 19th century, the highest frequency of extended families occurred within the wealthiest economic strata, and the poor rarely resided in extended families.

<sup>10</sup> I do not mean to imply that the rise of the primary individual was in any sense a *consequence* of the decline of the secondary individual but, rather, that because of the decline of secondary individuals, there was no net increase in the frequency of unrelated individuals. As noted earlier, primary individuals had little in common with secondary individuals, and the explanations for the decline of the secondary individual do not appear to be directly related to the explanations for the rise of the primary individual.

<sup>11</sup> I am grateful to Roald Euller for providing me with unpublished tabulations of the Current Population Survey.

<sup>12</sup> The median age at first marriage for women in 1985 was 23.3 years old, compared with 20.1 years old at its low point in 1956 and 21.9 years old in 1900. The comparable figures for men are 25.5, 22.5, and 26.1 years old. Overall, then, median marriage age is now quite close to 1900, but the age intervals between spouses have diminished (U.S. Bureau of the Census, 1986).

## Appendix: Adjustment Procedure for College Students in 1950

In 1940 and before, the census enumerated college students at their "usual place of abode," which meant that those in dormitories were usually counted as part of their parental family. In 1950 the

Table A.1. Living Arrangements of College Students and Persons Not in College: Persons Over 14, 1940 and 1950 (%)

Living arrangement	College students		Not in college	
	1940	1950	1940	1950
Primary individuals	1.03	1.87	3.57	4.78
Secondary individuals				
In household	2.88	6.07	3.74	2.86
Group quarters	7.72	39.41	2.60	2.92
Institutions	0.10	0.00	1.59	1.34
Family	88.26	52.64	88.51	88.08
N	971	643	95,518	33,068

census began to enumerate college students in the community where they attended college. The effects of this procedural change are shown in Table A.1. Note that the number of cases shown for 1950 is smaller than that for 1940; this is because in 1950 college attendance was listed on the sample line (see U.S. Bureau of the Census, 1984b). Almost half of the college students in 1950 were listed as unrelated individuals, compared with only about 12 percent in 1940.

It can be argued that it is preferable to count dependent college students in dormitories as secondary individuals, but as Goldscheider and DaVanzo (1986) point out, the issue is not clear-cut. The move from home to dormitory is often temporary and represents a tentative first step toward independence. In the end, I opted to make an adjustment to bring the 1950 census in line with the earlier data sets because such an adjustment is the only practical means of constructing a consistent series; the opposite adjustment is impossible, because the 1900 sample does not identify most college students.

To adjust for the changing treatment of college students, I assumed that within specific age, sex, and marital status groups, changes in the living arrangements of college students between 1940 and 1950 were proportional to changes in the living arrangements of persons who were not college students. Thus the proportion of college students in 1950 of a given age, sex, and marital status residing in a given living arrangement was assumed to be

$$c_{asm} = C_{asm} \frac{p_{asm}}{P_{asm}},$$

where  $C_{asm}$  is the proportion of college students in 1940 of a given age, sex, and marital status residing in a given family type;  $p_{asm}$  is the proportion of nonstudents in 1950 of the same age, sex, and marital status residing in that family type; and  $P_{asm}$  is the proportion of nonstudents in 1940 of the same age, sex, and marital status residing in that family type. The actual adjustment procedure was slightly more complicated than this, since the variable on college attendance was not available for non-sample-line

Table A.2. Effects of College Student Adjustment, 1950 Census: Living Arrangements of Persons Over 14 (%)

Living arrangement	Unadjusted %	Adjusted %
Primary individuals	4.76	4.72
Secondary individuals		
In household	2.90	2.82
Group Quarters	3.56	3.01
Institutions	1.31	1.31
Family	87.48	88.13

individuals in 1950. The sample-line individuals were sufficient to compute  $p_{asm}$ , but to apply the adjustment to the entire 1950 data set, it was necessary to impute college attendance on the basis of age, sex, and marital status.

The effects of the adjustment were small (see Table A.2). The only significant effect was on the percentage of secondary individuals residing in group quarters, which dropped from 3.56 to 3.01. Of course, even if the overall effects of adjustment were trivial, they were fairly important for some specific subgroups of the population, especially young single males.

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