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INCIDENCE OF FOUR-GENERATION FAMILY LINEAGES: IS TIMING OF FERTILITY OR MORTALITY A BETTER EXPLANATION?

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Objectives. This article estimates the percentage of lineages that include four or more generations for a sample of the U.S. population and explores how social status and race are related to lineage depth.

Methods. We assembled data from Waves 1 and 2 of the National Survey of Families and Households in order to estimate the proportion of adults in four or more generations for the Wave 2 sample (1992–1994). When necessary, we used various decision rules to overcome an absence of information about specific generations. We examine relationships between lineage depth and sociodemographic variables by using logistic regressions.

Results. The data show that 32% of the respondents were in lineages comprising four or more generations. Blacks and individuals of lower social class were more likely to be in four-generation lineages, especially shorter-gapped lineages. Whites and individuals of higher social class were not more likely to be in longer-gapped, four-generation lineages.

Discussion. The majority of the adult population in the early 1990s was in three-generation lineages. The verdict is still out on whether population aging results in the wholesale verticalization of lineages. Social differentials in four-generation lineages in the early 1990s were mainly due to differences in the timing of fertility, rather than mortality.

BENGTSON, Rosenthal, and Burton (1990) argued that the "demographic revolution" has led to an increase in the number and proportion of families characterized by a "bean pole family structure" or "verticalization," defined as lineages that comprise four or five living generations with each generation having few members (p. 264). More recently, Bengtson, Lowenstein, Putney, and Gans (2003, p. 2) wrote, "We have added a whole generation to the structure of many families." The belief that "verticalization" characterizes current lineages is so strong that George and Gold (1991, p. 72) conclude that it "is probably the most consistent and important change in family structure during the past century." Most of the evidence to support these contentions, however, relies on simulations of intergenerational ties (e.g., Cherlin, 1992; Himes, 1992; Treas, 1995; Uhlenberg, 1996). The belief that families now routinely comprise four and five generations is widespread despite the fact that the limited empirical evidence suggests that even four-generation families are uncommon (Farkas & Hogan, 1995; Rossi & Rossi, 1990; Uhlenberg & Kirby, 1998; Winsborough, Bumpass, & Aquilino, 1991). The first goal of this article, then, is to ascertain the best estimation of the percentage of lineages that include at least four generations from the perspective of a representative sample of adults in the U.S. population.

This article also explores social differentials as explanatory factors in lineage depth. Mortality and timing of fertility are responsible for lineage depth. It is well understood that in the process of demographic transition, declining mortality increases the probability of four- or even five-generation lineages. However, disparities in mortality persist between different social groups. Research consistently shows educational differentials in mortality among men and women and among Whites and Blacks in the United States. College graduates have lower age-specific mortality rates than do high school graduates in both the general level and specific causes of death (Elo & Preston, 1996). Such inequality may be attributed to income inequality, access to health care, health behaviors, or other psychosocial factors (Kaplan, Seeman, Cohen, Knudsen, & Guralnik, 1987). Mortality rates are also higher for Blacks than Whites at virtually all ages (Smaje, 2000). Elo and Preston reported that individual socioeconomic status accounted for only part of Black disadvantage. Community characteristics, such as racial segregation and poverty, also contribute to racial gaps in mortality (LeClere, Rogers, & Peters, 1997). In light of such social differentials in mortality, people of higher socioeconomic status should expect to have a greater probability of being in four- or higher-order lineages. Similarly, proportionately more Whites than Blacks should expect to be in such lineages.

Although the relationship between the timing of fertility and related social differentials has been well documented in the literature, researchers pay less attention to its role in forming great-depth lineages than they do to the role of mortality. Education is found to be persistently associated with the timing of fertility in the United States. Using data from Current Social Survey, Rindfuss, Morgan, and Offutt (1996) reported that women with college degrees postpone childbearing: During the period 1985–1989, about half of the total fertility rate of this group occurred after age 30. The desire for career-type jobs and reliance on paid childcare played major roles in this shift. But such a pattern was not observed among lesser educated women, who had children at relatively young ages. Chen and Morgan (1991) also documented that the trend in the substantial delay of first births since 1979 only held for Whites and not for non-Whites. The White/non-White divergence is dramatic and sustained and cannot be accounted for solely by educational attainment. A separate study based on a national sample of adolescents aged 15–16 found that Black respondents were about four times more likely than White respondents to have

Table 1. Frequency Distribution of Lineage Depths for the Entire Sample

Lineage Type	Lineage Code	Original Frequency	Estimated 4 Generation[a]
At least five-generation lineages			
? – GP – P – R – CH – GC – ?	(51)	34	34
At least four-generation lineages			
? – GP – P – R – CH	(41)	722	722
? – P – R – CH – GC – ?	(42)	931	931
P – R – CH – GC – ?	(43)	114	114
At least three-generation lineages			
? – GP – P – R	(31)	447	38
	(32)	2,360	658
? – P – R – CH	(33)	2,238	584
	(34)	54	28
R – CH – GC – ?	(35)	665	
?[b] – R – CH – GC – ?			
P – R – CH			
At least two-generation lineages			
	(21)	823	88
? – ? – P – R	(22)	296	
	(23)	85	33
P – R	(24)	702	
? – ?[b] – R – CH			
R – CH			
At least one-generation lineages			
? – ?[b] – R	(11)	79	
R	(12)	404	
Noncontinuous lineages			
?[b] – R –...– GC – ?	(81)	28	
? – P – R –...– GC	(82)	17	
P – R –...– GC	(83)	5	
Total		10,004	3,230

Notes: GP = grandparents; P = parents; R = respondent; CH = children; GC = grandchildren; ? = the possible existence of an ascending or descending generation. The dotted arrow lines indicate the route of estimation; the solid arrow lines represent the route on which the estimation was based.

[a]The estimated number of four-generation lineages based on the methods discussed.

[b]The question mark results from the fact that respondents reported that they did not know whether their parents were living.

ever had sexual intercourse (Furstenberg, Morgan, Moore, & Peterson, 1987). Such race differences in the timing of sexual initiation and fertility are affected by social norms, family background (such as parents' education), neighborhood socioeconomic status, labor market experiences, school environment, and peer pressure (Brewster, 1994; Burton, 1996; Hogan, Sun, & Cornwell, 2000). Consequently, in contrast to the expectations related to mortality, people of lower socioeconomic status can expect to have a greater likelihood of being in great-depth lineages given their shorter age intervals between generations. Similarly, Blacks are more likely than Whites to be in great-depth lineages.

Socioeconomic status and race seem to be associated with mortality and the timing of fertility in a way that conversely affects the likelihood of being in a great-depth lineage. However, the mechanisms by which great-depth lineages are formed are different for Whites and for people of higher socioeconomic status (for whom great-depth lineages are likely to stem from longer survival of older generations) than for Blacks and for people of lower socioeconomic status (for whom earlier addition of younger generations is likely to be the cause). As a result, one would expect that Whites and individuals of higher socioeconomic status would tend to be in great-depth lineages that have longer age intervals between generations, whereas Blacks and individuals of lower socioeconomic status would tend to be in great-depth lineages with shorter age intervals. The overall differentials in the prevalence of great-depth lineages between social groups should be a net result of these two competing mechanisms.

Three research questions are addressed in this paper: (a) What percentage of lineages comprised four or more generations in the U.S. population in the early 1990s from the perspective of adults aged 22 and older? (b) Are social characteristics (social class, race, and family background) associated with lineage depth? and (c) Is early fertility or delayed mortality a better explanation of great-depth lineages?

Methods

Data Source

Information available from the National Survey of Families and Households (NSFH) Wave 1 (1987–1988, $N = 13{,}007$) and Wave 2 (1992–1994, $N = 10{,}005$) was combined to describe respondents interviewed during Wave 2 (Sweet & Bumpass, 1996). We defined the lineage depth from the perspective of respondents. Ascending generations included respondents' parents, grandparents, and great-grandparents from both the father's and the mother's sides. Descending generations included respondents' biological and adopted children, grandchildren, and great-grandchildren. The respondent, not the lineage, was the unit of analysis. It is likely that someone in an ascendant generation would report a larger number of generations in his or her lineage. A respondent may have no descendents, for example, but, if his or her sibling does, from their parents' perspective the lineage would include more descendant generations.

In order to determine the proportion of respondents whose lineages comprise at least four generations, we required information about the existence of someone in all of the generations mentioned in the preceding paragraph. In both Waves 1 and 2 of the NSFH, respondents were asked to provide information about their parents, children, and grandchildren. For approximately half of the respondents who had at least one living parent at Wave 2, a parent was interviewed and asked about the survival of the respondent's grandparents. Comparable information was unavailable for respondents whose parents were not interviewed. Even for parents who were interviewed, no information about great-grandparents was collected. Looking down the lineage, no questions were asked about great-grandchildren. These limitations made it necessary for us to make educated guesses about whether respondents with missing information had living grandparents, great-grandparents, or great-grandchildren.

Estimating the Prevalence of Four-Generation Lineages

The lineage types into which the Wave 2 respondents were initially classified take into account uncertainty about the existence of specific generations. To facilitate discussion, we assigned a lineage code to each lineage type (see Table 1). Each question mark in the table indicates the possible existence of an ascending or descending generation, the result of a living parent

not being interviewed or the absence of a requisite question in the survey instruments. Using only information directly available from the NSFH, we classified 8,203 of the respondents (82%) as having fewer than four generations; for 6,131 of these (75%), at least one lineage is represented by a question mark. These respondents had the potential to be in at least a four-generation lineage.

We used evidence obtained from both the respondents and the interviewed parents to estimate the number of three-generation-or-fewer lineage types that was likely to include at least one member in generations represented in Table 1 by question marks. Table 1 shows the estimation method for each lineage; the dotted line points to the estimate to be made and the solid line refers to the distribution base on which we made the estimate.

Respondents in Lineage Code 31, for example, had no children but had at least one parent, at least one grandparent, and a question mark for the great-grandparent generation (because respondents with living parents were not asked about great-grandparents nor were their interviewed parents asked about grandparents). To estimate the number of the respondents who had great-grandparents, we determined the percentage of the respondents at each chronological age who had grandparents and assumed that living parents of the same age had the same number of grandparents. In other words, we assumed the age-specific likelihood for parents having a grandparent to be the same as that for respondents having a grandparent. We then cross-multiplied the frequency of parents for each chronological age by the corresponding proportion for respondents who had at least one surviving grandparent and summed the cross-products to obtain an overall frequency of four-generation families for this lineage type.

For Lineage Code 32, we estimated the number of the respondents' parents who had at least one living parent. We based this estimate on the age-specific frequency distribution of parents and the age-specific frequency distribution of the respondents who had at least one surviving parent, thus forming a four-generation lineage. For Lineage Code 33, the possibility of forming a four-generation lineage lies in the respondents having great-grandchildren. Here we assumed the age-specific likelihood of oldest children of respondents having a grandchild to be the same as that of respondents. For Lineage Code 34, which has the potential to be a four-generation lineage from both ascending and descending generations, we adopted a combination of the decision rules applied above.

Although there are only two generations reported for Lineage Code 21, because some of the respondents' parents were not interviewed, there is a possibility that respondents' grandparents and great-grandparents were still alive. We applied the decision rule used for Lineage Code 31 to estimate this likelihood. Similarly, for Lineage Code 23, if respondents' grandparents were alive, the respondents' lineage would comprise four generations. Based on the age-specific distribution for respondents with at least one grandparent among those whose parents were interviewed, we estimated the likelihood of having a surviving grandparent for those respondents whose parents were not interviewed. No estimates were made for one-generation lineages (Lineage Codes 11 and 12) or for lineages that included skipped generations (Lineage Codes 81, 82, and 83), although they are shown in Table 1.

Linking Lineage Depth to Sociodemographic Characteristics

Unlike the previous estimates, which moved *some* rather than *specific* respondents from one lineage type to another, the examination of associations between lineage type and sociodemographic variables required that *each respondent* be classified. For both ascending and descending generations, when information did not extend far enough, we used age to make educated guesses about the likelihood of there being a living member in a particular generation.

Focusing first on *ascending* generations, we assumed that people who were aged 75 or older were the oldest generation in a lineage. This assumption is supported by two empirical distributions in the sample: (1) Less than 1% of respondents aged 75 or older had a living parent; and, (2) of respondents' parents aged 75 and older who were interviewed, only 4% had a living parent. Based on the fact that only 3% of respondents older than age 50 whose parents were interviewed had a grandparent, we assumed that people older than age 50 who had living parents did *not* have grandparents. For *descending* generations, we assumed that respondents whose oldest child was aged 15 or younger did not have grandchildren. We based this decision on the fact that none of the respondents' children had a child before age 15 and that less than 2% of respondents' children aged 16 or younger had a child.

By applying these decision rules, we assigned 2,131 respondents in lineage types with question marks into one of two categories: (1) at least four generations or (2) less than four generations. By adding these 2,131 respondents to the 4,030 in lineage types with complete information, we brought the total number of respondents to 6,161 (approximately 60% of the original sample). Compared with those excluded from this analysis, respondents in the smaller, second sample were younger, had more education, and included more men, more Whites, and more unmarried persons.

In order to examine how race and social status are associated with different types of four-generation lineages, we further categorized four-generation lineages into shorter-gapped and longer-gapped lineages by using the age of the oldest member of each generation and calculating the age intervals between any two adjacent generations. For each lineage (which may involve two or three intervals depending on the number of generations), we calculated an average age interval. In order to guard against our analysis being an artifact of a specific choice, we used the first, second, and third quartiles of the average interval for this sample as thresholds to define shorter- and longer-gapped lineages. For example, by using the first quartile, we classified all the lineages with an average age interval below the first quartile as shorter gapped and the other four-generation lineages as longer gapped.

We coded race in four categories: White, Black, Hispanic, and other. We used the respondent's educational attainment (less than high school, high school, some college, bachelor's degree or higher) to measure current social class. Measures of social class background included father's and mother's educational attainment (less than high school, high school,

Table 2. Weighted Distribution of SocioDemographic Characteristics and Cross-Tabulations With a Four-Generation Lineage

Covariates	Univariate	All 4-Generation Lineage	Shorter Gapped	Longer Gapped
Race				
White	83	29	14	15
Black	10	34	22	11
Hispanic	6	24	16	8
Other	1	17	6	10
Respondent's education				
< High school	15	33	22	11
High school	34	33	19	14
Some college	23	32	15	16
Bachelor's or above	28	19	5	13
Father's education				
< High school	35	30	17	13
High school	25	31	14	17
Some college	8	29	10	19
Bachelor's or above	15	23	8	15
No information	18	28	18	9
Mother's education				
< High school	33	31	18	13
High school	36	31	15	16
Some college	9	27	10	17
Bachelor's or above	11	21	6	14
No information	11	24	15	8
Ever received public assistance				
Yes	8	33	22	11
No	92	28	14	14
Respondent's age				
22–29	14	29	11	17
30–39	23	29	12	17
40–49	24	29	18	11
50–59	20	38	20	17
60–74	16	23	12	11
75+	4	1	0	1
Gender				
Male	51	25	11	13
Female	49	32	18	14
Marital Status				
Married	64	33	16	17
Divorced	14	32	20	13
Widowed	7	22	13	9
Never married	15	9	4	5

Notes: Table data are presented as percentages. $N = 6,267$ for shorter-gapped lineage; $N = 6,235$ for longer-gapped lineage.

some college, bachelor's degree or higher, no answer) and whether the respondent's family had ever received any form of public assistance when the respondent was growing up (yes, no). Sociodemographic characteristics used as control variables in analysis included the respondent's age (22–29, 30–39, 40–49, 50–59, 60–74, 75 or older), gender (male, female), and marital status (currently married, divorced, widowed, never married). We report frequency distributions for these variables in Table 2.

We used a logistic regression to examine how lineage depth (four generations or more vs fewer than four generations) was associated with sociodemographic characteristics. We applied multinomial logistic regressions to model three possible outcomes: being in a shorter-gapped, four-generation lineage; being in a longer-gapped, four-generation lineage; and being in a non–four-generation lineage. We applied weights for respondents to all the statistical analyses.

Results

The Prevalence of Four-Generation Lineages

Column Four of Table 1 presents the estimated number of four-generation lineages for the entire sample of respondents. No estimates were necessary for Lineage Codes 41, 42, 43, and 51; the numbers are identical to the original frequencies, which are presented in Column Three. From the remaining lineage types, an additional 1,429 were estimated to comprise at least four generations, for a total of 3,230. This accounts for 32% of the total sample. By using the decision rules discussed in the Methods section, we categorized approximately one third of the respondents in the sample as members of lineages comprising four generations or more.

Lineage Depth and Sociodemographic Characteristics

We present the associations between lineage depth and sociodemographic characteristics in the form of cross-tabulations in Table 2. To save space, we only present the results on shorter- and longer-gapped lineages when the second quartile is used as the threshold. Blacks overall were more likely than Whites to be in four-generation lineages (34% vs 29%). The decomposition of these lineages revealed two opposite associations: Although Blacks were more likely than Whites to be in shorter-gapped lineages (22% vs 14%), Whites were more likely than Blacks to be in longer-gapped lineages (15% vs 11%). Hispanics and people of other ethnic groups had overall lower probabilities of being in four-generation lineages.

Generally speaking, higher levels of respondent education were associated with a lower probability of being in four-generation lineages. This pattern is more apparent for shorter-gapped lineages: the percentage of respondents in shorter-gapped four-generation lineages declined from 22% for those without a high school diploma to 5% for those with at least a bachelor's degree. Except for a reverse at the level of at least a bachelor's degree, the results also show that higher levels of respondent education were associated with a higher probability of being in longer-gapped lineages. These findings hold true for the associations between father's and mother's education, and lineage depth. Ever receiving public assistance as a child was related to an overall higher probability of being in four-generation lineages, an even greater likelihood of being in shorter-gapped lineages, but a lower probability of being in longer-gapped lineages.

Of the controlled demographic factors, respondents aged 50–59 had the highest percentage of being in four-generation lineages (both shorter and longer gapped), followed by the three younger age groups, without substantial differences in the overall prevalence. The lowest percentage in four-generation lineages was for respondents aged 75 or older. Women were more likely than men to be in any type of four-generation lineage. The married had the highest probability of being in

four-generation lineages, whereas the never married had the lowest, with the divorced and widowed in between.

Racial and social status differences shown in Table 2 support our expectations that Whites and individuals of higher social status are more likely to be in longer-gapped, four-generation lineages, whereas Blacks and individuals of lower social status are more likely to be in shorter-gapped, four-generation lineages. These patterns, however, are cross-tabulations that do not control for covariates.

Table 3 shows the results of a logistic regression on the likelihood of belonging to any four-generation lineage regardless of generational gap. The results largely confirm the aforementioned findings, except that the family background measures (father's and mother's education, and ever receiving public assistance) were not significantly associated with lineage depth. This may be attributed to the correlation between family background and respondents' own characteristics or to the mix of both shorter- and longer-gapped, four-generation lineages into one category, which may obscure the effects of these variables.

Table 4 presents the results of multinomial logistic regressions on three outcomes of the lineage variable (in a shorter-gapped, four-generation lineage; in a longer-gapped, four-generation lineage; with in a non–four-generation lineage as the reference). Three models based on the first (22.00 years), second (23.67 years), and third (25.67 years) quartile of the average age interval as the threshold were included.

Although the results varied from model to model, the effects of race and respondents' education were similar. Compared with Whites, Blacks were more likely to be in shorter-gapped, four-generation lineages than in non–four-generation lineages. However, Whites were not associated with a higher probability than Blacks of being in longer-gapped, four-generation lineages. In fact, the first model shows that Blacks were more likely than Whites to be in longer-gapped, four-generation lineages. Respondent education was conversely related to the possibility of being in a shorter-gapped, four-generation lineage. The pattern echoes what is presented in Table 2. Persons with a high school degree and those with some college education were not statistically different from individuals with less than high school education when it came to being in longer-gapped, four-generation lineages. However, persons with a bachelor's degree or higher were significantly associated with a lower—rather than higher—probability of being in such lineages.

The results were mixed for family background measures. Higher level of father's education seemed to be related to a greater likelihood of being in longer-gapped, four-generation lineages, but such a relationship only holds up to the level of some college. There is some evidence that respondents whose mother had a higher level of education—especially bachelor's degree or higher—were less likely to be in shorter-gapped, four-generation lineages, which was similar to the effect of respondents' own education. The association between ever receiving public assistance and lineage depth is only significant in the second model, in which receiving public assistance is associated with a greater likelihood of being in shorter-gapped, four-generation lineages.

The associations between demographic variables (age, gender, marital status) and lineage depth were largely consistent across the three models and reflect the patterns shown in Table 2.

Table 3. Odd Ratios of Weighted Logistic Regression of Respondents Belonging to a Four-Generation Lineage ($N = 6{,}267$)

Covariates	Odds Ratio
Race	
White (reference)	
Black	1.513***
Hispanic	.647**
Other	.546
Education	
< High school (reference)	
High school	.714***
Some college	.671***
Bachelor's degree or above	.343***
Father's education	
< High school (reference)	
High school	1.085
Some college	1.273
Bachelor's or above	1.114
No information	1.017
Mother's education	
< High school (reference)	
High school	1.028
Some college	.941
Bachelor's or above	.855
No information	.687**
Received public assistance as child	
No (reference)	
Yes	1.110
Age	
22–29 (reference)	
30–39	.744**
40–49	.615***
50–59	.836
60–74	.400***
75+	.019***
Gender	
Female (reference)	
Male	.714***
Marital status	
Married (reference)	
Divorced	.815
Widowed	.816*
Never married	.163***

*$p < .05$; **$p < .01$; ***$p < .001$.

Discussion

The first goal of this analysis was to determine what proportion of respondents in a representative sample of the adult population was in a lineage comprising at least four generations. Our estimate is that in the early 1990s, 32% of respondents aged 22 or older in a representative sample of the U.S. population were in such lineages. This percentage is higher than the 19.3% reported by Rossi and Rossi (1990) for a sample of individuals aged 19 or older in the Boston metropolitan area in the mid-1980s. It is considerably higher than the 2.4% reported by Farkas and Hogan (1995) for people aged 18 and older for a pooled sample of adults in seven countries including the United States in 1986–1987. However, Farkas and Hogan considered only adult children and grandchildren and did not estimate the likelihood of four generations

Table 4. Odds Ratios of Weighted Multinomial Regression of Respondents Belonging to a Specific Four-Generation Lineage by Different Threshold

	First Quartile		Second Quartile		Third Quartile	
Covariates	Shorter Gapped	Longer Gapped	Shorter Gapped	Longer Gapped	Shorter Gapped	Longer Gapped
Race						
White (reference)						
Black	1.879***	1.281*	1.703***	1.169	1.527***	1.191
Hispanic	.991	.501***	.762	.501**	.656**	.608
Other	.365	.529	.386	.585	.381*	.792
Education						
< High school (reference)						
High school	.526***	.850	.672***	.799	.678***	.887
Some college	.528***	.791	.567***	.868	.650***	.814
Bachelor's or above	.123***	.445***	.187***	.548***	.272***	.594*
Father's education						
< High school (reference)						
High school	1.113	1.121	1.020	1.241*	1.078	1.284
Some college	1.001	1.383*	1.037	1.572**	1.240	1.576*
Bachelor's or above	.826	1.219	1.066	1.239	1.068	1.400
No information	1.306*	.913	1.101	.928	1.072	.855
Mother's education						
< High school (reference)						
High school	.751*	1.082	.969	1.042	.984	1.049
Some college	.706	1.016	.764	1.097	.908	1.035
Bachelor's or above	.597	.915	.653*	.984	.703*	1.148
No information	.758	.607***	.659**	.677*	.686**	.598*
Received public assistance as child						
No (reference)						
Yes	1.371	1.004	1.332*	.859	1.214	.784
Age						
22–29 (reference)						
30–39	1.204	.672***	.839	.701**	.881	.559***
40–49	1.317	.501***	.998	.389***	.859	.252***
50–59	1.322	.755*	1.091	.683***	1.034	.538***
60–74	1.545	.353***	.492***	.356***	.473***	.304***
75+	.000***	.028***	.007***	.035***	.010***	.052***
Gender						
Female (reference)						
Male	.494***	.798***	.599***	.846*	.630***	1.018
Marital status						
Married (reference)						
Divorced	.953	.777**	.926	.702**	.993	.851**
Widowed	.951	.778	.872	.769	.872	.646
Never married	.292***	.129***	.179***	.147***	.181***	.120***

Notes: Being in a less than four-generation lineage is the reference category for the multinomial regression. For the table, $N = 6,235$.
*$p < .05$; **$p < .01$; ***$p < .001$.

as we did for the present analysis. The inclusion of countries with very low birth rates (e.g., Germany and Italy) undoubtedly also contributed to their much lower estimate. Soldo and Hill (1995) reported that approximately 45% of respondents in a U. S. sample aged 51–61 were in lineages that comprised at least four generations. In the present sample, this age category had the highest proportion in four-generation lineages, although our percentage was lower than Soldo and Hill's (37% for the second sample). The difference can be explained in part by the fact that Soldo and Hill included respondents' parents-in-law. For a study of three-generation families in France, Attias-Donfut (2003) contacted a random sample of 10,000 people between the ages of 49 and 52. Of these, 60% reported having at least one living parent and one adult child. Although Attias-Donfut reported that 45% of the respondents were in four-generation families, slightly less than one third of those in three-generation lineages were included in the next phase of the study and it is not clear from her report whether the smaller group of respondents was representative. The comparable figure for this age category from the NSFH for our smaller sample is 36%.

Clearly, among persons aged 22 and older in the early 1990s in the United States, four generations or more was not the statistical norm. According to figures presented in Table 1, the norm was three-generation lineages, the category that captured 44% of the respondents even after a portion of the respondents

was reclassified as being in four-generation lineages. According to Uhlenberg (1995, p. 24), "The paucity of empirical data has encouraged a misconception to develop that four- and five-generation families are becoming common under modern demographic conditions." We make no claim that the findings presented here are definitive but, like the results of other analyses, they seem to argue for caution when it comes to assuming that demographic change translates neatly into change in depth of family lineages.

In this article we also explored whether lineage depth was related to current social class, race, and social class background with age, gender, and marital status controlled. The analysis revealed some important findings. First, generally speaking, current social class was systematically conversely related to the likelihood of being in four-generation lineages, and Blacks were more likely than Whites to be in four-generation lineages. Second, these patterns are even more striking for the likelihood of being in shorter-gapped, four-generation lineages. Third, educational attainment, which was the measure of current social class, *decreased* the likelihood of being in longer-gapped, four-generation lineages. Compared with Blacks, Whites were not more likely to be in longer-gapped, four-generation lineages. Although there is some positive association between father's education and the chance of being in a longer-gapped, four-generation lineage, the supporting evidence is relatively weak.

As stated earlier, two demographic forces contribute to the formation of four-generation lineages: longer survival and earlier births. Based on what is known about the links among social class, race, mortality, and timing of births, we expected more individuals of higher social class and more Whites to be in longer-gapped, four-generation lineages than individuals of lower social class and Blacks, who were expected to be disproportionately in shorter-gapped, four-generation lineages. The results support only half of this expectation. The differentials in shorter-gapped lineages received strong support from the data, but there was no solid evidence for differentials in longer-gapped lineages. This may be because even though individuals of higher social class and Whites tend on average to live longer, they also have first children at older ages. Differentials in four-generation lineages between these social groups seem to be primarily a result of differences in the timing of births, not in the chance of longevity.

The findings reported on in this article are a snapshot of the early 1990s. The data do not describe a trend in the incidence of four-generation lineages over time. Our findings may seem to be at odds with beliefs about the role of longevity, or mortality at large, in the formation of great-depth lineages. The long-term trend in mortality decline, which is part of the general demographic transition, certainly contributes to greater lineage depth in American families, and it is tempting to attribute social differentials in lineage depth to differentials in mortality or survival. These findings suggest, however, that, at least in the early 1990s, it is the timing of childbearing, not increased longevity, that accounts for being in four-generation lineages.

Incomplete data was a major limitation of this study. The criteria we adopted to classify the uncertain cases were conservative, and as a result we were able to classify only 60% of the original sample. Compared with the original sample, more of the respondents in the second sample were male, White, younger, and unmarried, and had higher levels of education—characteristics that were significantly related to lineage depth. An evaluation of the degree to which these differences biased the results awaits the collection of complete data on lineages in future studies.

The extremely low percentage (1%) of four-generation lineages among the oldest age group clearly is an artifact of the conservative criteria employed to categorize respondents. In Rossi and Rossi's (1990) sample, persons aged 71 or older had the highest percentage (29%) of being in four-generation lineages, followed by those aged 50–60 (20%). In the present study, respondents who had children and an oldest grandchild older than age 15 were eliminated from the final analysis because we could not decide with confidence whether a grandchild had children. Undoubtedly, many grandchildren older than age 15 already had children of their own. If we were to assume that all the respondents aged 75 and older whose oldest grandchild was older than age 15 had at least one great-grandchild, the percentage of four-generation lineages for this age group would increase from 1% to 67%. The exclusion of these cases definitely leads to an underestimate for this age group. However, the underestimate for the oldest group does not cause significant changes in the findings of the regression analysis reported in the Results section. To test the robustness of our result, we assumed that respondents had a great-grandchild if their oldest grandchild was older than 20, 25, or 30, and we repeated the analysis for each age with the new cases included. The results were similar to those based on the current sample.

Longitudinal data on complete lineages would permit documentation of the changing incidences of various lineage types and analysis of the underlying demographic and social forces that lead to them. As Uhlenberg (1993) noted more than a decade ago, "There is nothing intrinsically difficult in collecting information on lineage depth from a survey, but no estimates for the population based on representative samples exist" (p. 229). Our hope is that the findings reported here, which clearly are provisional because they are derived from imperfect data, may lead to the collection of more complete data in the future so that the issues raised here may be explored with greater confidence.

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