# A Multigenerational View of Inequality

**Robert D. Mare**

**Abstract** The study of intergenerational mobility and most population research are governed by a two-generation (parent-to-offspring) view of intergenerational influence, to the neglect of the effects of grandparents and other ancestors and nonresident contemporary kin. While appropriate for some populations in some periods, this perspective may omit important sources of intergenerational continuity of family-based social inequality. Social institutions, which transcend individual lives, help support multigenerational influence, particularly at the extreme top and bottom of the social hierarchy, but to some extent in the middle as well. Multigenerational influence also works through demographic processes because families influence subsequent generations through differential fertility and survival, migration, and marriage patterns, as well as through direct transmission of socioeconomic rewards, statuses, and positions. Future research should attend more closely to multigenerational effects; to the tandem nature of demographic and socioeconomic reproduction; and to data, measures, and models that transcend coresident nuclear families.

**Keywords** Multigenerational · Social mobility · Lineages · Inequality

## Introduction

Much demographic research focuses on the behavior of individuals, including their fertility, sex practices, health, migration, intergenerational exchanges, socialization of children, contact with kin or other networks, residential mobility, and educational and economic decisions and accomplishments. Yet it is ultimately our job to understand the implications of these studies for population renewal and change. A concern with how populations work, not just with representativeness of individual-level observations in

R. D. Mare (✉)
Department of Sociology, University of California–Los Angeles, 264 Haines Hall, Box 951551,
Los Angeles, CA 90095-1551, USA
e-mail: mare@ucla.edu

populations, is the distinguishing feature of population science. I am concerned with the type of demography that deals fundamentally with the interdependence of population change and the kinds of causes and effects that are the bread and butter of empirical population studies. I focus on the problem of the generations in demography—specifically, intergenerational processes and how our field should study them. My broadest theme is that in our portfolio of research, we may have overemphasized a concern with direct relations between parents and children in micro-level studies of family behavior. Conversely, we have underemphasized a concern with the influence of more remote kin and the role that parent-child relations, in general, play in the transformation of populations. I suggest that we should attend more closely to (1) the social connections more distant than parent to child, especially those across three or more generations of kinship; (2) the multigenerational effects of processes within the nuclear family, even when effects are transmitted almost solely by nuclear families; (3) not only to the personal effects of teaching, resource transmission, psychosocial influence between members of different generations but also to the demography of reproduction: fertility, mortality, marriage, and migration; and (4) new data and measures that accommodate multigenerational units of analysis, such as family lineages.

In the first part of this essay, I discuss concepts, such as "multigenerational" and "inequality;" the competing claims about whether or not there is evidence for multigenerational effects; and our typical practice of looking at only one or two generations at a time, especially in the study of intergenerational social mobility. In the second section, I suggest mechanisms that give rise to multigenerational effects, focusing mainly on how social institutions, broadly construed, give rise to multigenerational effects, because they transcend individual lives and differentially affect the wealthy, the middle class, and the poor. I also touch upon some biological mechanisms that may lead to a higher level of multigenerational continuity than our typical two-generation models imply. In the third section, I describe the interdependence of inter- and multigenerational effects with population renewal, and present examples of research that shows the fruits of taking a multigenerational perspective.

## Why Study Multigenerational Effects?

This essay might be construed as a plea to study the demography of dynasties, that is, populations of family-based units that persist over many generations. However, I avoid the term *dynasty*, largely because human mating patterns make the existence and identification of distinct dynasties demographically impossible in all but the most inbred of island communities or in kinship schemes that accord unequivocal primacy to one sex or the other (e.g., Bernheim and Bagwell 1988). Thus, I use terms like "inheritance," "multigenerational," and "lineage." I am indeed interested in the possibility of social influence across more than two generations and the existence of gradually changing yet persistent family entities, but I leave imprecise the degree of interdependence among these multigenerational entities, which is likely to vary across populations with varying rules about marriage and other lateral social ties. For the purposes of this essay, I regard a family as a group of individuals who

are descended from a common ancestor or connected through marriage or adoption. The content of family life, including norms and practices of intrafamilial obligation, understandings of who is or is not a family member, and the emotional connections among kin, may vary considerably between and within populations.

That nuclear family–based research can be culture-bound and present-bound is hardly a new point. It underpins anthropological and sociological approaches that treat kin ties as problematic and mysterious rather than given. Rather than analyzing processes within a fixed set of family relations, these types of research ask where and when different forms of kin-related behavior arise. Similarly, research on economic development and ethnographic research on many topics address the complex social relationships within and between households and across multiple generations. But most of our core research, especially work focused on developed societies, is rooted in a paradigm of parent-to-child or parent-to–adult offspring connections. This is a typical assumption in one of my own research areas, intergenerational mobility—especially educational, occupational, and income mobility (see, e.g., Mare 1981)—but it pervades our field. We study parent-child interactions and bequests and other transfers from elderly parents to adult offspring. We study the effects of family background and social class on all manner of "outcomes" in our work. We may do this for good reasons, although we may also do it just because it is expedient. Either way, I suggest that we should attend to a broader set of connections.

The reasonableness of a call for more attention to the effects of grandparents and other more remote ties notwithstanding, some careful skeptics have already investigated the presumed effects of grandparents and other ancestors on children net of the effects of parents and found these effects weak or nonexistent. For example, Cherlin and Furstenberg (1992), in their landmark study of grandparents, concluded that grandparents are valued kin, but their influence on grandchildren beyond what the parents can do is usually limited. Warren and Hauser (1997) showed, in their analysis of three generations of families in the Wisconsin Longitudinal Study, that occupational status is transmitted from parent to child without net assistance from grandparents.

Despite these null findings, however, we should still give further consideration to multigenerational effects. The conclusions of these studies may not be invariant across time and place; that is, they may depend on the particular institutional arrangements, samples, or populations on which they are based. In later sections of this essay, I review studies in a variety of contexts that provide highly suggestive evidence for grandparent effects. But even if nuclear families are the only key agents of influence and their effects are strong, they may persist beyond one generation. For example, if parents' wealth strongly influences offspring's wealth, then the fortunes of a family in one generation propagate several generations down the road. The turn of our field toward careful specification of causal relations, the use of experiments, random assignments of roommates, "natural" instruments, or other devices to rule out spurious associations as an explanation for apparent effects should also address longer-term impacts across generations. We may know how to change the lives of individuals, but can we change families, lineages, or entire populations?

The impact of one generation on the next is not as straightforward as the simply estimated "effect" of parents on offspring. Even in a Markovian world, in which

individuals affect their children but not their grandchildren, above and beyond their indirect influence through the characteristics and behavior of their own children, we should not just multiply intergenerational correlations or elasticities together to estimate the multigenerational impact (though that is a rough and ready place to start). Such effects are convoluted with those of reproduction. The *demographic* significance of our focus on intergenerational correlation lies in the interdependence of the effects of one set of individuals on another combined with the births, deaths, marriages, and geographic mobility of individuals.

A further theme is that the rigorous search for proof of causal links between the actions or traits of one set of individuals and the actions or traits of other individuals (e.g., the effects of the behavior or resources of parents on outcomes for children) needs to be balanced by the multiple concerns of population science. In considering the effects of families on outcomes for individuals, population research must also focus on the creation of families. The latter is, of course, an abiding concern of many family demographers, but it tends to be neglected in studies that treat family characteristics as exogenous with respect to outcomes for the next generation. This concern is related to, but distinct from, other key issues that arise when we try to generalize from samples of individuals to entire populations. One such issue is the implications of proven causal relations for whole populations in experiments or other research strategies that approximate randomized studies: can we generalize from the limited variation in a given study to the full variation observed in whole populations, or know how a social intervention that succeeds in a demonstration project will play out if applied to everyone, including people who live side-by-side and potentially influence one another on a daily basis (see, e.g., Deaton 2009; Moffitt 2003, 2005)? A second issue is with the implications of average or local effects when treatments and effects are inherently heterogeneous (Brand and Xie 2010; Smith 1990). In contrast, my concern is that when we look at the effects of causes, we should not ignore the causes of effects (e.g., Morgan and Winship 2007). Put differently, rather than focusing exclusively at the effects of treatments, we need to ask, Under what conditions do these treatments occur? If many scholars are interested in the effects of families on children, at least some demographers should ask, Where do these families come from? But the latter question should not be considered in isolation from the former. The causes beget the effects, which beget the causes, and so it goes. But how it goes depends critically on how multiple generations are connected.

Finally, although the link between parent and child at various life stages is tangible and well worth studying, we should also widen our focus on what to measure, what to count, and what to be puzzled about. A true multigenerational perspective requires that we describe more than just individuals, parent-child pairs, or nuclear families.

Multigenerational Effects and Inequality

Social and economic inequalities are foci of much population research, whether about the effects of families on life chances; differences in family, fertility, and marriage; residential segregation; disparities in health and mortality; poverty; or other topics. Taking a long view of inequality—longer than a single generation and enriched by an appreciation of demographic processes—there may be more than

meets the eye. One of the key issues in our understanding of inequality is the role played by intergenerational mobility in loosening or tightening the link between the socioeconomic positions, rewards, and statuses of one generation and those of the next. High mobility lessens the sting of being at the wrong end of inequality if the life chances of one's offspring are only loosely tied to one's own. Indeed, high rates of intergenerational mobility may undermine lineages if family members are not able to confer their advantages to their decedents. Averaged across generations, inequalities are smaller when mobility rates are high. Conversely, high rates of intergenerational persistence amplify the costs and benefits of one's socioeconomic position, lead to higher inequalities when averaged across generations, and sustain family lineages. This is all the more true if intergenerational persistence is further reinforced by multigenerational effects—if, for example, children receive extra benefits from having well-positioned grandparents, regardless of where their own parents stand in social hierarchies. Finally, because fertility, mortality, and migration are interdependent with socioeconomic position, they may amplify or dampen whatever gross inequality effects are implied by rates of mobility alone. In short, the strength of multigenerational effects is inherently an issue of inequality, whether in money, health, knowledge, or survival chances.

The Two-Generation Paradigm

The staple of research on the intergenerational transmission of inequality is the analysis of intergenerational correlations or associations or transition rates. The study of educational, occupational, and income mobility is a venerable subject in sociology, a subject of lively interest in economics during the past 20 years, and periodically a topic for historians. Multivariate versions of this work include multiple aspects of family background, including socioeconomic statuses; family size, structure, and stability; and multiple outcomes. The outcomes extend to child development, delinquency, health behavior, and health status, thereby involving other disciplines as well. Longitudinal extensions of this research document life transitions and trajectories.

   A good example of how central this type of work is to population research is provided by Palloni's (2006) PAA Presidential Address, in which he showed how the socioeconomic position of families affects the health of young children, and how health in early childhood may, in turn, affect later health and socioeconomic success. Variants of this approach apply to intergenerational transfers of encouragement, knowledge, money, time, space, and other assistance. They are a platform for detailed description. And they are the basis for theories about how parents and offspring decide about schooling; marriage and divorce; childbearing; work; and retirement; and, along the way, they save, spend, transfer, and bequeath. In short, for most of us, this is the familiar social science perspective.

   Our basic studies of fertility and mortality likewise tend to focus on only one or two generations. This is true whether we are conducting micro-level studies of levels and differentials in vital processes or making macro-level projections and studies of population dynamics. An occasional interesting paper on grandparent influence on fertility notwithstanding, our basic understanding of reproduction is that populations renew through an independent sequence of two-generation relationships. In our empirical models, each generation of mothers bears children who, in turn, bear

children independently of the actions of the grandparents. In formal and applied demography, we project populations by multiplying together Leslie matrices, which summarize the fertility and mortality rates of each generation (e.g., Keyfitz and Caswell 2005). Of course, we do recognize that populations are heterogeneous in fertility and other vital rates. Much of our work is, in fact, about heterogeneity in vital processes. Microdemographers discover, describe, and explain differences in fertility and mortality rates; and macrodemographers, following the principle that heterogeneous populations always grow faster than a homogeneous population with the average of the heterogeneous rates (e.g., Keyfitz and Caswell 2005), analyze the implications of this heterogeneity for population dynamics. Our formal Markovian models of population renewal can be combined with our empirical models of intergenerational effects. Indeed, those of us who have worked on blending models of intergenerational transmission with population renewal make liberal use of this Markovian view of the world (e.g., Mare 1997; Preston and Campbell 1993).

What unites this large body of work is an exclusive focus on one or two generations at a time: mother and daughter, father and son, sisters and brothers, husband and wife, elderly and adult offspring. Whether focusing on parent-child correlation, husband-wife correlations, or sibling correlations, our models and research questions are concentrated in a tight web of first-order contacts, indeed a special subset of such contacts defined by close kinship.

The Significance and Sources of Multigenerational Effects

Why should we be concerned about the narrowness of this focus, and why should we think otherwise? After all, this paradigm has been productive and, along the way, we have had occasional reassuring empirical demonstrations that a two-generation rather than a multigenerational view of intergenerational mobility will suffice. In addition to the multigenerational studies that have yielded negative effects to which I have already referred, one can go back to Hodge's (1966:33) conclusion that

> Although neither type of mobility [inter- or intragenerational] can be fully described with Markov process, the observed similarity to such a process is indicative of the high degree of discontinuity which characterizes both the careers of individuals over their working lives and the social position of families over several generations.

This is an important claim about how societies and populations work. It implies that hierarchies of families are relatively transitory. Whereas inequalities among social positions and the rewards associated with them may persist, the families whose members occupy these positions and receive the associated rewards are shuffled substantially from one generation to next. Not only are rates of intergenerational mobility relatively high, but also families are unable to extend their influence by more than a single generation. In two-generation approaches to family influence, parents directly affect their offspring, just as they themselves have been affected by their own parents. When it comes to thinking about longer-run change, following the Hodge conclusion, we think in terms of simple causal chains. That is, grandparents do not directly affect their grandchildren. Rather, the influence of generation $t$ on generation $t + 2$ is only indirect, via generation $t + 1$. The

alternative, however, is to consider lagged (legacy) effects of grandparents (and ancestry more generally). In a three-generation model, the characteristics of generation $t$ and $t + 1$ affect the characteristics of generation $t + 2$. More generally, we can consider potential effects of the characteristics of generation $t$ on those of any subsequent generation $t + k$. In principle, whether a two-generational or a multigenerational view of mobility and inequality is closer to the truth should, in considering any particular population, be a matter of empirical investigation.

## Markovian and Non-Markovian Inheritance

A high level of continuity from one generation to the next in the lives of families may be consistent with either a Markovian or non-Markovian view of the world. In thinking about families of great wealth that appear to persist from one generation to the next, we should distinguish between two possibilities: (1) a high correlation between the wealth of parents and the (eventual) wealth of their children, yet a pattern of correlations across several generations that is nonetheless consistent with Markovian persistence (i.e., with the net irrelevance of grandparent wealth for grandchild wealth); or (2) a high set of correlations among the wealth of several generations that is formally inconsistent with simple Markovian inheritance and that imply effects across several generations. If by multigenerational effects we mean a longer-run set of intergenerational connections than just a string of tight parent-to-child connections, then the bar is higher for establishing a conceptual basis for multigenerational effects and for empirical demonstration of their existence. For most of my discussion, I focus on families connected by more than a string of two-generation correlations, however strong they may be. Yet multigenerational and Markovian continuity of families may be hard to distinguish. In a world of absolutely perfect status inheritance—for example, a pure caste system—parents, grandparents, and earlier ancestors are, for the purpose of analysis, identical in their social and economic positions. The perfect correlations between each generation make alternative types of intergenerational effects indistinguishable. In most real populations, however, intergenerational associations are far from perfect, and it becomes an empirical matter whether remote ancestors have an independent effect on one's social position net of the effects of one's parents. Further, whether multigenerational effects are present may not be an all-or-nothing matter. An interesting case is one in which status inheritance is nearly perfect at the very top or very bottom of a hierarchy. Here, the usual models of two-generation association may apply to families in the middle of the socioeconomic distribution, but at the extremes, an individual's fortunes may depend on the actions and experiences of a more distant ancestor who was lucky or unlucky enough to achieve great wealth or abject poverty.

## Mechanisms of Multigenerational Influence

### Institutions and Intergenerational Persistence of Durable and Perishable Wealth

If we consider non-Markovian patterns of inheritance, we must ask, Where do lagged effects come from? A broad class of mechanisms that may give rise to these effects is the social institutions that sustain them. To understand how individuals

may affect one another across more than one generational divide, we must consider how institutions contribute to these effects. Institutions, which are formal or informal social arrangements that persist over time, are supported by demography, geography, power, and cultural legitimacy. Because children and their parents typically keep in touch with each other and studying parent-child pairs is relatively easy, social scientists tend to maintain a two-generation view of the world. But institutions have a key feature: in general, they outlive individuals. The maintenance of institutions and their enduring impacts on families and individuals may be an important source of multigenerational effects. Family institutions themselves are the obvious ones. If roles are prescribed for grandparents, this is by definition an institutional mechanism that may provide grandparent support. But a broader set of institutions encompasses the law, family, work, education, and finance. Importantly, the institutions that govern multigenerational effects vary across social hierarchies.

Social scientists talk with varying degrees of rigor about different forms of capital: for example, physical, financial, human, social, and occupational. It is useful to think about some of these forms of capital in terms of their *perishability*. That is, once they exist, how long do they keep? A key potential multigenerational effect works through great wealth amassed in a single lifetime but passed on from generation to generation. The accumulation of a stock of physical and financial capital in one generation takes a family out of the middle-class mode of wealth accumulation and transmission. For the contemporary middle class, wealth accumulates in gradual phases of saving *within a single lifetime*: for buying a house, for paying for college, and for retirement. Parental wealth at midlife is largely transformed into the human capital of the next generation—indexed by educational attainment and used in occupational settings—making possible the next generation's turn at wealth accumulation. Human capital and occupational incumbency may keep well for most of a lifetime, but unless they are transformed into financial capital (a big obstacle for most members of the paid labor force), they tend to perish thereafter. On the other hand, physical and financial capital can, if substantial enough, transcend individual lives.[1]

Intergenerational Correlations

In this light, it is easy to understand the history of sociological and economic research on the intergenerational correlation of various socioeconomic statuses. Starting in the 1960s, sociologists showed that correlations between the educational attainments or the occupational attainments of fathers and sons (using various scales and measures) ranged from about .35 to .40 (e.g., Blau and Duncan 1967). Yet the intergenerational correlations of incomes, measured using the data available at that time, were much lower, around .15 (e.g., Bielby and Hauser 1977). Stocks of human

---

[1] The perishability of capital may result in part from depreciation—that is, a reduction in value because of use, age, and obsolescence. But it also results from consumption or investment losses (in the case of financial capital) and retirement or death (in the case of human and cultural capital). Strictly speaking, some forms of human capital may "survive" beyond a single life. Specific forms of human capital (e.g., the skills of an artisan) may be directly transmitted from parent to offspring. In contemporary societies, however, where we rely heavily on educational institutions and on-the-job training, most forms of human and occupational capital tend to perish after the holder of these capacities or entitlements retires or dies.

capital, indexed by educational attainment, and occupational entitlements are relatively durable and can last most of an adult life. By contrast, income flows, unless exceptionally large, are comparatively highly perishable. However, in the early 1990s, Solon (1992) and Zimmerman (1992), exploiting longitudinal income data in the Panel Study of Income Dynamics (PSID), showed that averages of sequences of parent and of offspring incomes yield much higher correlations on the order of .4, about the same as the educational and occupational correlations discovered 30 years before. Since then, numerous econometric studies, using longer sequences of parent and offspring incomes in the PSID, as well as more reliable administrative income data, have pushed estimates of the intergenerational correlations of incomes ever higher. For example, a widely cited study by Mazumder (2005), using Social Security earnings data, puts the estimate at around .6. Similar results show up for other countries. The longer and more reliable the income sequences we use in such correlational studies, the closer we may approximate the intergenerational correlation of wealth. Studies of wealth transmission per se are rarer because of data and conceptual problems. It is beyond this essay to review these difficulties, but suffice it to say that wealth presents hard issues about ownership, fungibility, units of analysis, convertibility, and liquidity that go beyond our difficulties in thinking about and measuring incomes, occupations, or human capital. These problems notwithstanding, wealth tends to be more unequally distributed and more highly correlated across generations than the other three dimensions of inequality that have been studied so extensively.

Upper- Versus Middle-Class Modes of Inheritance: Financial and Human Capital

When it comes to wealth, high intergenerational correlations suggest multigenerational influence. Physical wealth can deteriorate, and financial wealth can be frittered away, but both have the potential to last at least several generations. Not only is their shelf life less constrained by the limits to a human life, but also they can be augmented through further investment that is not tied to the lives of individuals. Some families are so wealthy that their fortunes could not be destroyed in several generations even if heirs were perversely motivated to try. More important, financial wealth in the form of a family business, farm, or simply a large capital account frees subsequent generations from relying on the perishable and uncertain forms of wealth provided through educational and occupational pursuits. It breaks the middle-class cycle that dominates most families' lives and, for that matter, most of our research.

Wealth is also sustained by legal and commercial forces. Although "wealth management" is a service that has concrete meaning for the few, legal arrangements such as "generation-skipping trusts" are well-institutionalized mechanisms for assuring that wealthy grandparents will enrich their grandchildren.

Social and residential isolation can also reinforce wealth persistence. Exclusive neighborhoods, clubs, and social registers are visible trappings of wealth. Despite the limited importance of educational competition for the very wealthy, elite educational institutions may consolidate family position across generations. The legacy system of college admissions, practiced in the nation's private universities during the first three-quarters of the twentieth century, was a key mechanism of elite persistence. Exploring the history of Harvard, Yale, and Princeton during the heyday of the

legacy system, Karabel (2005) documented the benefit that applicants to these schools received from having a father who was an alumnus. In 1951, for example, rates of admission were 73% for sons of Yale alumni, 79% for Princeton sons, and a staggering 94% for Harvard sons. By themselves, these data may be consistent with a two-generation model, although the admission rates for Harvard sons were so high that later generations owed a specific debt to the ancestor who became the first Harvard man in his family. But these rates were, in all likelihood, enhanced by multigenerational effects. Young men whose fathers did not attend one of these schools but whose grandfathers attended or donated to the university were highly advantaged in admission. Men whose Ivy League grandfathers had no sons and who could not have an Ivy League mother in the pre-coeducation era drew legacy benefits from grandfathers.

The demographic import of Ivy League colleges Harvard, Princeton, and Yale is limited, both today and in the past. Nonetheless, we should attend to Karabel's observations because, among other reasons, the legacy system illustrates an institutional mechanism of multigenerational influence. He also showed the uneasy relationship between the direct inheritance of privilege by the wealthy and the indirect and less certain advantage via the more meritocratic educational pathway for the middle class. Legacy admission to private colleges was and is a practice that extends well beyond the Ivy League (e.g., Kahlenberg 2010). And it may be on the rise in other types of schools as well. For example, some affluent Los Angeles–area communities have attempted to establish legacy systems in K-12 public schools that make special provisions for grandchildren of area residents (Mehta 2009), paralleling similar practices already in place at private schools.

Although I have stressed the importance of wealth inheritance among the very wealthy, a number of studies document transfers across multiple generations for families that are not wealthy. For example, Quisumbing (1997) showed that grandparents in the Philippines pass family wealth directly to grandchildren: land to grandsons and educational finance to granddaughters. Iglesias and Riboud (1988) reported strong net effects of grandparent effects on "child quality" in Spain. Ardington et al. (2010) documented the subtle interdependence of three generations in South Africa, depending on whether grandchildren have been orphaned by parents who died of AIDS and the availability and capacity of grandparents who may be caregivers. Coate et al. (2010) used the PSID to investigate expenditures in extended families (including, importantly, noncoresiding kin). Extended families do not behave as a unit, nor do they behave as isolated individuals. Their analysis confirms that for many families in the United States, grandparents play a big role in their grandchildren's schooling options and decisions. And LaFave and Thomas (2010) demonstrated that decisions about family resource allocation in Indonesia extend beyond coresident household members, with positive effects of extrahousehold resources for children's health.

Needs for and Availability of Kin

Another set of mechanisms through which individuals may be affected by kin more remote than their parents involves the needs for and the availability of kin, especially when death, divorce, or migration take parents away or when

economic hardship weakens parents' capacity to provide for their children. In the United States, the mid-twentieth century was a unique time for children: Uhlenberg (2009) showed that, compared with recent cohorts, children born in earlier eras were somewhat more likely to lose one or both parents as the result of higher adult mortality. Children born in later eras were *much* more likely to suffer the absence of a parent as the result of divorce, separation, and nonmarital fertility. By themselves, these trends suggest potential socioeconomic needs of children and single parents during these periods. In the earlier era, children were somewhat *less* likely to have living grandparents who could substitute for missing parents. The trends suggest a greater, albeit highly variable role for whatever extra kin were available. In the later era, in contrast, grandparents and possibly other older kin *are* more likely to be available.

Kin need and kin availability are issues for the entire population, but their effects may vary by social class. McLanahan (2004) and Uhlenberg (2009), among others, have emphasized the growing inequality in the availability *and quality* of potential kin, owing to shifting differences in fertility, marriage, and assortative mating that favor more-educated and prosperous families. Disparity in the socioeconomic standing of grandparents has emerged in recent years, just when children may need their grandparents the most. The variations in patterns of kin availability and kin need over the past 100 years in this country and even more so worldwide are strong evidence that parent-to-child correlations or transactions are too narrow a basis for the study of intergenerational social mobility, intergenerational effects more generally, or the population dynamics that may result.

The changing living arrangements and availability of kin for children, while well-known to demographers, exemplify a general phenomenon that has important implications for the study of intergenerational mobility. The conclusions we draw about mobility, whether the amount of mobility, the inheritance of social position, or the position of people relative to their forebears, depends critically on how we think about the web of kin who make up one's family background. Biblarz and Raftery (1993) suggested that occupational mobility is greater (inheritance smaller) in single-parent families and conjectured weaker intergenerational links in the black population than among whites as a result. Beller (2009) showed that trend estimates of intergenerational occupational mobility that have focused only on fathers have, by ignoring the growth in the *combined* influences of the socioeconomic positions of fathers *and* mothers, missed a sharp upswing in intergenerational persistence. When family position is indexed by both parents, occupational inheritance has, in fact, increased markedly across recent cohorts. The increased intergenerational persistence of occupational status reflects both the growing economic importance of women's work in the status of families and also secular increases in educational homogamy (e.g., Schwartz and Mare 2005). These associations are not direct evidence of a multigenerational effect; they are simply the net associations between the characteristics of parents and those of their offspring. That mothers have always been important and have become *economically more* important is a useful though familiar point (e.g., Sweeney 2002). But the greater point is the more general one: our inferences about intergenerational effects depend on which relationships we consider. Because the quantity and quality of these relationships depend on evolving demographic patterns, no fixed set of family relationships

suffices for summarizing intergenerational mobility. This conclusion undermines the value of the usual practice of studying intergenerational socioeconomic mobility by focusing only on a single, predetermined parent-child association.

Social Isolation and the Persistence of Hardship

At the bottom of the socioeconomic distribution are extreme disadvantages for both individuals and families over more than one generation. Institutionalized subjugation, such as slavery or serfdom, while in place, ensures intergenerational continuity at the bottom or even outside of a system of social stratification. But even when such subjugation is removed, its effects may persist (1) through new institutions of subjugation, (2) through such deep human and physical capital deprivation that upward mobility is nearly impossible, or (3) through extreme segregation that isolates the nominally free from mainstream systems of wealth acquisition and mobility. In the case of African American slavery and its aftermath, abundant research has documented each of these mechanisms. Blackmon (2008), for example, described the regimes of indentured labor combined with corrupt law enforcement that bound black men to exploitive employers in the period between the Civil War and World War II. Keister (2000), Avery and Rendall (2002), and others have documented the massive and persistent wealth disparities between blacks and whites. A long tradition of demographic research has documented the extreme spatial isolation of African Americans (e.g., Duncan and Duncan 1957; Massey and Denton 1993; Taeuber and Taeuber 1965). The latter research suggests that institutionalized residential isolation has weighed heavily on successive generations of some of the poorest members of society.

   More direct evidence of the legacy of social isolation is contained in work by Sharkey and Elwert (2010) on residential immobility and strong deleterious effects on children of living in poor neighborhoods. Using the PSID, they isolated the impact of *grandparents*' neighborhood conditions on grandchild outcomes. They showed the negative impact of the poverty level of the neighborhood where a child's *parents* grew up, controlling for the neighborhood in which the child lives, on black children's reading performance. They showed independent effects of both neighborhoods that combine to an estimated one-half of a standard deviation in reading performance. This work not only suggests a pathway for multigenerational persistence of disadvantage at the low end of the socioeconomic distribution but also suggests that we should cast a wider net in considering multigenerational effects. That is, grand-kin are important, but "grand-neighborhoods" may be as well.

Cumulative Advantage and Disadvantage

Whereas some of the effects of prior generations are mainly contingent on the configuration of available kin—that is, whether two parents are available or surrogates from elsewhere in the family, including grandparents, are called in—other effects are more systematic and independent of kin availability. Yet even kin availability has a systematic component to the extent that it reflects long-run trends in fertility, mortality, marital disruption, women's work roles, and other patterns. These systematic mechanisms of persistent effects beyond one's own family of origin have in common

a principle of cumulative advantage or disadvantage—that is, that conditions established in the remote past have an enduring impact and cumulate rather than equilibrate across generations. In a two-generation model, families who are unusually well-off in one generation are likely to "regress" toward the average in the next. Conversely, families who are unusually poor in one generation are more likely to "bounce back" in the next. This is, from an egalitarian standpoint, a happy consequence of Markovian inheritance. But in a multigenerational view, some families may be able to "build on" advantages they already have and move up further in successive generations; other families may remain mired in hardship. O'Rand (2002) and DiPrete and Eirich (2006) formalized the concept of "cumulative advantage" in careers or lifetimes. DiPrete and Eirich unified Merton's classic ideas about scientific careers—past performance signaling future productivity, the role of chance events, and the Matthew (reputation) effect—with more recent ideas about superstar markets, gene-environment interactions, and other mechanisms. Yet whereas these authors are concerned with the course of individual lives, related ideas and models may, with suitable modifications, be applied to intergenerational processes as well. Cumulative advantage can be an *inter*generational process if we allow for multigenerational effects. Institutional mechanisms such as wealth accumulation and transfer, slavery and indentured employment, legacies in college admissions, kin need and availability, and segregation may amplify differences between individuals born into different families. If they do so to a greater extent than would be expected on the basis of a two-generation model of social mobility, this would imply *intergenerational* cumulative advantage.

Non-Markovian Fertility

Our world is even more complicated if we acknowledge the possibilities of mutigenerational effects on basic demographic processes. How this plays out in its full complexity is beyond any single population scientist. But we should acknowledge creative and promising theoretical and empirical work on this subject. For example, in Israel, Danziger and Neuman (1989) found intergenerational "inheritance" of fertility along the maternal line (i.e., the greater a woman's number of siblings, the higher her fertility), though not along the paternal line. Cox and Stark (2005) theorized about "demonstration effects"—that is, that grandparents motivate their children to bear them grandchildren, under whose watchful eyes the middle generation will be motivated to treat the grandparents well in their old age. Meroni and Pronzato (2010) exploited the four generations represented in the Survey of Health, Ageing and Retirement in Europe and provided evidence that the availability of childcare help by potential grandparents raises the fertility of the middle generation. These types of effects present an extra challenge for researchers on social mobility and population transformation. Whereas the formal demography of Markovian population renewal is well worked out, both for homogeneous populations and populations differentiated by levels of wealth in which intergenerational mobility occurs, more work needs to be done on the macrodemographic implications of non-Markovian fertility (and perhaps other processes), both for homogeneous populations and where social mobility is an important part of the process.

Biological Mechanisms of Multigenerational Influence

Although I have described a number of social institutions that may be implicated in multigenerational effects, biological mechanisms such as epigenesis may play a role as well. It is beyond my expertise to review the possible effects of epigenesis, processes through which environments contribute to inherited modes of gene expression across multiple generations without modification of DNA. The extent and durability of these effects in humans is the subject of ongoing debate and research (e.g., Gluckman and Hanson 2006; Jablonka and Lamb 2005). A related but distinct set of mechanisms may arise through grandparent effects on genetic transmission and expression in the female line. Because a (second-generation) woman's eggs are created in the weeks shortly after her conception, the eggs that contain her (third-generation) children's maternal genetic material experience almost nine months in their (first-generation) grandmother's womb. This allows for intrauterine and, indirectly, broader environmental influences of grandmothers on their children's health and development (Gluckman and Hanson 2005). This biological pathway of multigenerational influence is well-established, although its import for the kinds of outcomes that are the focus of our intergenerational mobility research has been the subject of very limited research. Suggestive evidence in support of the importance of these mechanisms, however, is provided by recent studies of the combined effects of maternal and grandmaternal socioeconomic status and health-related behaviors on infant birth weight (Astone et al. 2007; Misra et al. 2005).

## Demography and Socioeconomic Reproduction

The problem of multigenerational effects becomes a true demographic issue when we see how the intergenerational transmission of socioeconomic status combines with basic demographic processes to transform populations from one period or generation to the next. Population research fundamentally rests on knowledge about differential reproduction, encompassing marriage, fertility, migration, and mortality. Some dramatic evidence of these processes comes from observations of population genetics. For example, Zerjal et al. (2003) conjectured that a haplotype on the Y chromosome, which is highly prevalent in many contemporary Asian populations, has been carried through a lineage of male descendants of Genghis Kahn. Although the claim that these are really Genghis Kahn's genes (as opposed to those of some other man) is debatable, it does illustrate ambitious multigenerational thinking about the implications of differential fertility, mortality, marriage, and migration. This research shows that contemporary populations do not result from a high intergenerational correlation between the occupations or incomes of families in the Khan era or by the mechanics of genetic transmission alone. Rather, they result from population dynamics, subject to mechanisms of selection that include the accumulation and use of wealth and power combined with superior opportunities for survival of progeny. Population genetic studies are ambitious and powerful, whether in the 1,000-year span of the Mongol study, the 30,000-year span of other studies of the coevolution of genetic and cultural traits (e.g., Cavalli-Sforza and Feldman 1981), or even in the enticing possibility that high-fertility counterparts to

Genghis Kahn are yet to be discovered in recent populations. Despite the historical reach of these population genetic studies, genetic transmission is, ironically, mainly a two-generation proposition. Each of us genetically is, save for some possible epigenetic effects, a function of what was in the reproductive cells of our mothers and fathers and the environments to which we have been exposed during our lifetimes. But what we are and where we are *socially* are a function of history, intergenerational relations, and differential reproductivity over many generations. Genes are the endogenous variables in these studies. And the Mongol study offers strong evidence for multigenerational social effects.

Most social science population researchers are interested in intergenerational processes based on shorter time spans for people who are more directly observable. Yet most social mobility research avoids this issue altogether by *conditioning* on the distributions of parents' and offspring's traits (e.g., income or educational attainment) and describing these associations. This tradition of work has served well for answering the narrow question, "Who gets ahead?" (Jencks et al. 1979). But it is inadequate for analyzing the population question of how a socioeconomic distribution in one generation gets transformed into a distribution in later generations. And it is even inadequate for such causal questions as, What would happen to the next generation if we made it easier for girls (the potential mothers of the next generation) to stay in school (Mare and Maralani 2006)? The educational attainment of girls affects whether, when, and whom they marry; how many children they have and when they will have them; whether they and their families migrate; and, ultimately, the health and success of their children. But recognizing these relationships, however, is not just a matter of specifying the direct and indirect effects of mothers on children. Rather, it amounts to understanding how the parent-child pairs, which form the heart of two-generation research, come about. This can lead to surprising results at the population level when the effects of maternal education and differential fertility combine. In Indonesia, for example, patterns of intergenerational educational mobility, assortative mating, and differential fertility imply that the effects of efforts to raise the educational attainments of women will depend on where in the educational process such efforts are applied and whether one focuses on effects on families or on the populations. Because fertility is highest among women with intermediate levels of schooling, raising the schooling of girls who would otherwise receive little or no schooling (to at least some elementary or secondary schooling) raises the average educational attainment of the population: not only will their children have better environments while growing up, but also the girls will grow up to have more children. However, raising the schooling of girls who would otherwise have a high school education (to receive some higher education) will benefit their families but will have a muted effect overall because these girls will, on average, bear fewer children. In the latter case, the effects on the education level of families and populations may differ (Mare and Maralani 2006).

In general, mobility studies should examine the associations between parents and offspring in a way that takes differential fertility, child and adult mortality, assortative mating, and migration into account. Such studies can take account of intergenerational effects of parents' social position that include not just the capacity of parents with more resources to confer socioeconomic advantages on their offspring but also the net reproductive capacity of the parents. Examples of work

that is in this spirit include Lam's (1986) study of income mobility and fertility in Brazil; Preston and Campbell's (1993) study of differential fertility and inheritance of IQ; and my work with Musick on single-parent families in the United States (Musick and Mare 2004), with Maralani on women's education in Indonesia (Mare and Maralani 2006), and with Choi on women's education and migration in Mexico (Choi and Mare 2009). All these studies explicitly or implicitly build on Feeney's (1970) and Rogers' (1975) models of multiregional population projection by exploiting analogies between geographic and intergenerational mobility.

A corollary of this perspective is that, Markovian or not, intergenerational effects are inherently multigenerational. Interventions that change the socioeconomic conditions of families or individuals also change their demographic behavior, that is, changes in the numbers, longevity, and characteristics of future progeny. I do not mean to minimize how hard it is to appraise such effects. Policies targeted at girls may create marriage markets that differ from those produced by policies that change outcomes for both boys and girls. As we look beyond one generation, our capacity to project what will happen is made more complicated by the need to take account of both marriage market dynamics and family effects on children. But, as in many other areas of demographic inquiry, historical studies with adequate data and suitable models can give us some idea of the multigenerational implications of changes in the socioeconomic characteristics of parents. To my knowledge, this style of research has not incorporated individual- or family-level multigenerational effects of the sort discussed in the earlier parts of this essay, whether in social mobility or in basic demographic processes. This will be an important future step.

Multigenerational Studies of Social Mobility

I have cited a number of studies that provide suggestive evidence for grandparent effects on a variety of outcomes, typically for children in the third generation. The arguments in this essay imply that more of these types of investigations will be fruitful. In addition to these studies, it will be desirable to revisit studies of intergenerational socioeconomic mobility—along the dimensions of income, educational attainment, occupational status, and wealth—to determine the conditions under which departures from Markovian patterns of intergenerational mobility come about and how different fertility, mortality, and other demographic processes contribute to intergenerational effects. Two closely related lines of inquiry are needed: studies of the net ("causal") effects of grandparents on their adult grandchildren and more descriptive studies that investigate whether intergenerational associations of socioeconomic distributions are consistent with the Markovian assumption. An example of the former type of study is Warren and Hauser's (1997) analysis of occupational status attainment in three generations of Wisconsinites. Although this study revealed no net effects of grandparents' occupational statuses on those of grandchildren, mid-twentieth century Wisconsin families may be a population in which multigenerational effects are unusually weak. Thus, where data are available, we should carry out similar studies in a variety of times, places, and institutional circumstances. Potentially fruitful contexts for this research include South Africa, China, and central Europe, societies that underwent massive social transformations during the middle and late twentieth century and for which sample

survey data on social mobility across three generations are available. The extreme hardship and segregation of blacks in South Africa, both during and in the aftermath of apartheid, may be a source of longer-run multigenerational continuity at the bottom of the socioeconomic distribution than would be expected on the basis of Markovian inheritance. The pre-Soviet, Soviet, and post-Soviet eras in central Europe potentially created circumstances in which, for some birth cohorts, individuals' socioeconomic achievements may depend more on grandparents than parents. Although the disruptive effects of socialist revolution on patterns of parent-to-offspring socioeconomic mobility in some of these societies have been documented, the potential effects of grandparents who lived primarily in the pre-Soviet era on grandchildren who came of age in the post-Soviet era require more research. Similarly, China, which has undergone massive transformations since the middle of the twentieth century, may exhibit substantial changes in intergenerational and multigenerational effects. Treiman and colleagues have gathered data for each of these societies on multiple generations of educational and occupational attainment, relying on the retrospective reports of members of the third generation (Szelenyi and Treiman 1994; Treiman et al. 1996; Treiman and Walder 1998).

Although such studies will be useful, they should also be extended in a variety of ways. First, they should be supplemented by demographic data and models so that intergenerational effects are properly weighted by the differential fertility and survival of each generation (e.g., Mare and Maralani 2006). As discussed earlier, the *effect* of a change in the characteristics of a parent or grandparent is not only the simple regression-based estimate of the net association with offspring's characteristics but also the demographic effect of differential reproduction.

Second, these multigenerational studies should be supplemented with studies based on better data. Although the retrospective surveys are unique and underexploited data sources, they potentially suffer from survivor and recall biases. The grandparent generation can be recalled only when they have both children and grandchildren. For analyses of the determinants of outcomes in the grandchild generation, this may be satisfactory provided that it is possible to ignore recall errors and ignorance of grandchildren about the socioeconomic characteristics of grandparents. But from the standpoint of the socioeconomic reproductivity of the grandparents' cohorts, it is necessary to know about the fertility and survival of those cohorts, including persons who were childless. Survival and recall problems are less serious with prospective and archival sources. Although high-quality prospective data are not available for societies that have undergone radical transformations in the past half-century, they are increasingly available for a variety of other periods and countries. The best of these data obtain rich information on social mobility, demographic processes, and other characteristics and behaviors. In the United States, the PSID and Health and Retirement Study are the best ongoing data collection projects of this kind, and they are being used as templates for the study of intergenerational relations in many other countries. Related studies in less-developed nations, such as the Indonesian and Mexican Family Life Surveys, will also be valuable for this purpose provided that their panels are sustained.

Third, it will be necessary to consider more than just three generations. For this purpose it will almost certainly be necessary to go beyond survey data and to rely instead on ambitious archival and reconstruction efforts that permit a detailed examination of family lineages over many generations. An outstanding example of

this type of data is archival data on China. Campbell and Lee have assembled lineage data based on public registries for northeastern China from the eighteenth to the twentieth century (Lee et al. 2010). The data permit rich connections among kin across multiple generations and can be used to study multigenerational effects on both demographic and socioeconomic outcomes (Campbell and Lee 2008). The data are prospective, meaning that lineages can be traced forward as they grow or become extinct, making it possible to study socioeconomic and demographic reproductivity in tandem.

Finally, it will be necessary to attend to the identification of "grandparent" or "lineage effects," when we almost always face the competing hypothesis of unmeasured characteristics of parents. One may be tempted to define away grandparent effects by characterizing them as just another set of parental characteristics. This is satisfactory in practice only if we are truly confident that the scope and characteristics of relevant ancestors are known and simple enough that they can be reduced to a small number of variables and that ancestral effects are limited to two generations. More complex and distant ancestry effects may not, in practice, be reducible to parent effects. Even in simple cases, moreover, one has to measure the relevant ancestral characteristics; relying on parents alone is insufficient. The general issue is one of distinguishing "unmeasured heterogeneity" from "state dependence" (e.g., Bartholomew 1982; Heckman 1981; Hsiao 2003). Armed with enough generations of observations and reasonably tight arguments about the presence or absence of institutional, biological, and demographic support for multigenerational effects, their presence or absence can be rigorously adjudicated.

A second type of study of multigenerational processes focuses on whether patterns of intergenerational socioeconomic mobility—whether for income, wealth, occupation, or educational attainment—follow the Markovian assumption. Such studies are concerned with describing mobility patterns rather than with determining whether grandparent characteristics are causes of grandchild outcomes. A simple version of this type of study was provided by Hodge (1966) in the study discussed previously. Hodge compared the observed intergenerational mobility rates from grandfathers to grandsons with those that would be implied by the two sets of intergenerational rates, from grandfathers to fathers and from fathers to sons. The size and pattern of discrepancies between the observed and implied rates of mobility provide evidence for and against the Markovian assumption.

So far as data permit, modified versions of this approach should be replicated and extended to a variety of populations. As Hodge himself pointed out, his study ignored differential fertility levels and timing, which should be incorporated into the mobility tables (e.g., Mare 1997). Additionally, investigators should consider the possibility that mobility rates are heterogeneous. Although this is an obvious observation when we think of variation among observable groups defined by gender, ethnicity, region, and so on, heterogeneous mobility processes may also arise from mixtures of unobserved or partially observed processes. For example, some families may follow a Markov process in that grandparents' and grandchildren's socioeconomic positions are conditionally independent given the positions of parents, whereas other families may follow a more complex process in which grandparents' and grandchildren's positions are associated even after parents' positions are taken into account. This

mixture may not map simply into fixed demographic categories, but rather may be governed by a complex set of cultural, economic, and other forces that are only partially observed by the analyst. The task for researchers is both to identify these sources of heterogeneity using direct measures of the institutional forces of multigenerational effects (such as those proposed in this essay) and to develop statistical models for representing these mixtures in mobility data.

Finally, it is necessary to address the difficulty of determining whether intergenerational mobility data follow a Markov process or a more complex process. If patterns of intergenerational mobility are constant over time, it is relatively straightforward to discriminate between Markovian and non-Markovian patterns in mobility tables for three or more generations. However, if the mobility process is changing, apparent net associations between the characteristics of grandparents and grandchildren may be artifacts of changes in mobility patterns. In the latter case, grandparents' characteristics may appear to be associated with those of their grandchildren when, in fact, there is no net association. Rather, two-generation associations, albeit in a form that changes across the generations, may suffice to describe intergenerational mobility patterns. Successful resolution of this identification issue may require data on more than three generations. It may also require careful substantive reasoning about which aspects of intergenerational mobility may be time invariant.

Descriptive Statistics

In addition to the need for more and better data and models, we should also think about describing different phenomena than we usually do. We are all members of surviving multigenerational lines. Yet, as illustrated by archival data such as those of Campbell and Lee (Lee et al. 2010), many other lines have not been so fortunate. Our descriptions of patterns of social mobility and inequality are almost always confined to survivors. A more rigorous approach to the multigenerational study of inequality is to describe the joint processes of reproductivity and socioeconomic prosperity and hardship. The success of a lineage is a moving average of the socioeconomic well-being and health of its members, either in total or on a per capita basis. The likelihood that this well-being outlives individuals (and leaves lineages well-off or faring poorly) depends on whether it takes the form of durable physical or financial capital or of perishable human capital. As tough as the data requirements are, we need something analogous to individual or family permanent income measures of wealth, income, occupation, and human capital for lineages. The distribution of these measures of success will dictate *inequality* among lineages. Both the total and the per capita calculations depend on fertility and mortality, and these, of course, depend on socioeconomic conditions. In short, to view inequality in a multigenerational perspective, not only do we need data and models, but we also need to describe new phenomena.

**Conclusion**

We ignore the effects of ancestors and higher-order social contacts at the peril of sound demographic research. It is likely that we have overstated intergenerational

mobility in this country and elsewhere or, at the very least, have misunderstood the pathways through which it occurs. Our models of social mobility have a strong mid-twentieth century American middle- and working-class bias. That is, they emphasize the pivotal role of formal schooling in transmitting the advantages conferred by parents on offspring and inducing new variation in the socioeconomic positions of the next generation that is independent of those of the previous generation (Blau and Duncan 1967). This is understandable given the overwhelming dominance of these types of families in our best nationally representative sources of data and the healthy aversion of demographically trained social scientists toward drawing broad conclusions from observations of elite or marginal populations. Yet such an orientation limits our ability to see other types of intergenerational mobility and immobility patterns that may dominate the highest and lowest segments of social hierarchies and to envision that the relative sizes of elite and underclass populations may change over time. We should be open to pluralistic models of mobility that regard populations as containing mixtures of two-generational and multigenerational modes of socioeconomic persistence.

A corollary of this conclusion is that the "correct" family configurations for the study of social mobility may vary across time and place. In some times and places, father-to-offspring associations may summarize adequately how families pass their advantages and disadvantages on to the next generation. In others, mothers may be a key part of the process as well. In still others, nonresident kin or earlier ancestors may have large effects on new generations of children. Population heterogeneity in these modes of intergenerational mobility is always a possibility. Finally, social mobility is as much about family creation and destruction as it is about associations between the characteristics of key kin in each generation. The "effects" of family background are almost always mechanisms through which some parts of the population grow faster than others, and social mobility itself is just one part of the picture. We need to study biological and socioeconomic reproduction in tandem.

Many of the pioneering researchers in this area came of professional age during the 1950s, 1960s, and 1970s, when mortality was low and falling, fertility was fluctuating, immigration was modest, most households had two parents with a well-defined division of labor, and inequality was stable (and much lower than today). The social science that emerged at that time was remarkably good and deservedly influential, but in some ways it reflected the ethos and concerns of the middle class at that time. Times have changed, our resources have matured, and our capacities to see further into the past, around the globe, and to the extremes of the distributions that we study have grown. In due course, a more multigenerational perspective on inequality will seem a natural way to look at things.

# References

Ardington, C., Case, A., Islam, M., Lam, D., Leibbrandt, M., Menendez, A., et al. (2010). The impact of AIDS on intergenerational support in South Africa: Evidence from the cape area panel study. *Research on Aging, 32,* 97–121.

Astone, N. M., Misra, D. P., & Lynch, C. D. (2007). The effect of maternal socio-economic status throughout the lifespan on infant birthweight. *Paediatric and Perinatal Epidemiology, 21,* 310–318.

Avery, R. B., & Rendall, M. (2002). Lifetime inheritances of three generations of whites and blacks. *The American Journal of Sociology, 107,* 1300–1346.

Bartholomew, D. J. (1982). *Stochastic models for social processes* (3rd ed.). New York: Wiley.

Beller, E. (2009). Bringing intergenerational social mobility research into the twenty-first century: Why mothers matter. *American Sociological Review, 74,* 507–528.

Bernheim, B. D., & Bagwell, K. (1988). Is everything neutral? *Journal of Political Economy, 96,* 308–338.

Biblarz, T. J., & Raftery, A. E. (1993). The effects of family disruption on social mobility. *American Sociological Review, 58,* 97–109.

Bielby, W. T., & Hauser, R. M. (1977). Response errors in earnings functions for nonblack males. *Sociological Methods & Research, 6,* 241–280.

Blackmon, D. A. (2008). *Slavery by another name: The re-enslavement of black Americans from the Civil War to World War II.* New York: Anchor Books.

Blau, P. M., & Duncan, O. D. (1967). *The American occupational structure.* New York: Wiley.

Brand, J. E., & Xie, Y. (2010). Who benefits most from college? Evidence for negative selection in heterogeneous economic returns to higher education. *American Sociological Review, 75,* 273–302.

Campbell, C., & Lee, J. (2008). Kin networks, marriage, and social mobility in late imperial China. *Social Science History, 32,* 175–214.

Cavalli-Sforza, L. L., & Feldman, M. (1981). *Cultural transmission and evolution.* Princeton, NJ: Princeton University Press.

Cherlin, A. J., & Furstenberg, F. F. (1992). *The new American grandparent: A place in the family, a life apart.* Cambridge, MA: Harvard University Press.

Choi, K. H., & Mare, R. D. (2009, April). *International migration and the reproduction of education from one generation to the next.* Paper presented at the annual meeting of the Population Association of America, Detroit, MI.

Coate, P., Dalton, M., Hotz, V. J., & Thomas, D. (2010, April). *The family that shares is the family that cares: Are extended families efficient?* Paper presented at the annual meeting of the Population Association of America, Dallas, TX.

Cox, D., & Stark, O. (2005). On the demand for grandchildren: Tied transfers and the demonstration effect. *Journal of Public Economics, 89,* 1665–1697.

Danziger, L., & Neuman, S. (1989). Intergenerational effects on fertility: Theory and evidence from Israel. *Journal of Population Economics, 2,* 25–37.

Deaton, A. (2009). *Instruments of development: Randomization in the tropics and the search for the elusive keys to economic development.* Unpublished manuscript. Princeton University Research Program in Development Studies, Center for Health and Wellbeing.

DiPrete, T. A., & Eirich, G. M. (2006). Cumulative advantage as a mechanism for social inequality: A review of theoretical and empirical developments. *Annual Review of Sociology, 32,* 271–297.

Duncan, O. D., & Duncan, B. (1957). *The negro population of Chicago.* Chicago, IL: University of Chicago Press.

Feeney, G. (1970). Stable age by region distribution. *Demography, 6,* 341–348.

Gluckman, P., & Hanson, M. (2005). *The fetal matrix: Evolution, development and disease.* Cambridge, United Kingdom: Cambridge University Press.

Gluckman, P., & Hanson, M. (2006). *Mismatch: The lifestyle diseases timebomb.* Oxford: Oxford University Press.

Heckman, J. J. (1981). Heterogeneity and state dependence. In S. Rosen (Ed.), *Studies in labor markets* (pp. 91–139). Chicago, IL: University of Chicago Press.

Hodge, R. W. (1966). Occupational mobility as a probability process. *Demography, 3,* 19–34.

Hsiao, C. (2003). *Analysis of panel data* (2nd ed.). Cambridge, United Kingdom: Cambridge University Press.

Iglesias, F. H., & Riboud, M. (1988). Intergenerational effects on fertility behavior and earnings mobility in Spain. *The Review of Economics and Statistics, 70,* 253–258.

Jablonka, E., & Lamb, M. J. (2005). *Evolution in four dimensions: Genetic, epigenetic, behavioral, and symbolic variation in the history of life*. Cambridge, MA: MIT Press.

Jencks, C., Bartlett, S., Corcoran, M., Crouse, J., Eaglesfield, D., Jackson, G., et al. (1979). *Who gets ahead? The determinants of economic success in America*. New York: Basic Books.

Kahlenberg, R. (2010). *Affirmative action for the rich: Legacy preferences in college admissions*. New York: The Century Foundation.

Karabel, J. (2005). *The chosen: The hidden history of admission and exclusion at Harvard, Yale, and Princeton*. Boston: Houghton Mifflin.

Keister, L. A. (2000). *Wealth in America: Trends in wealth inequality*. Cambridge, United Kingdom: Cambridge University Press.

Keyfitz, N., & Caswell, H. (2005). *Applied mathematical demography* (3rd ed.). New York: Springer-Verlag.

LaFave, D., & Thomas, D. (2010, April). *Extended families and investments in children*. Paper presented at the annual meeting of the Population Association of America, Dallas, TX.

Lam, D. (1986). The dynamics of population growth, differential fertility, and inequality. *The American Economic Review, 76,* 1103–1116.

Lee, J. Z., Campbell, C., & Chen, S. (2010). *China Multigenerational Panel Dataset, Liaoning (CMGPD-LN) 1749–1909. User guide*. Ann Arbor: Inter-university Consortium for Political and Social Research.

Mare, R. D. (1981). Change and stability in educational stratification. *American Sociological Review, 46,* 72–87.

Mare, R. D. (1997). Differential fertility, intergenerational educational mobility, and racial inequality. *Social Science Research, 26,* 263–291.

Mare, R. D., & Maralani, V. (2006). The intergenerational effects of changes in women's educational attainments. *American Sociological Review, 71,* 542–564.

Massey, D. S., & Denton, N. A. (1993). *American apartheid: Segregation and the making of the underclass*. Cambridge, MA: Harvard University Press.

Mazumder, B. (2005). Fortunate sons: New estimates of intergenerational mobility in the United States using Social Security earnings data. *The Review of Economics and Statistics, 87,* 235–255.

McLanahan, S. (2004). Diverging destinies: How children are faring under the second demographic transition. *Demography, 41,* 607–627.

Mehta, S. (2009, May 16). Legacy enrollments offered at two top L.A.-area schools districts. *Los Angeles Times.* Retrieved from http://articles.latimes.com/2009/may/16/local/me-legacy16.

Meroni, E. C., & Pronzato, C. (2010, April). *Grandparents' help and fertility decisions*. Poster presented at the annual meeting of the Population Association of America, Dallas, TX.

Misra, P. D., Astone, N. M., & Lynch, C. D. (2005). Maternal smoking and birth weight: Interaction with parity and mother's own in utero exposure to smoking. *Epidemiology, 16,* 288–293.

Moffitt, R. (2003). Causal analysis in population research: An economist's perspective. *Population and Development Review, 29,* 448–458.

Moffitt, R. (2005). Remarks on the analysis of causal relationships in population research. *Demography, 42,* 91–108.

Morgan, S. L., & Winship, C. (2007). *Counterfactuals and causal inference. Methods and principles for social research*. Cambridge, United Kingdom: Cambridge University Press.

Musick, K., & Mare, R. D. (2004). Family structure, intergenerational mobility, and the reproduction of poverty: Evidence for increasing polarization? *Demography, 41,* 629–648.

O'Rand, A. M. (2002). Cumulative advantage theory in life course research. *The Gerontologist, 22,* 14–20.

Palloni, A. (2006). Reproducing inequalities: Luck, wallets, and the enduring effects of childhood health. *Demography, 43,* 587–615.

Preston, S. H., & Campbell, C. (1993). Differential fertility and the distribution of traits: The case of IQ. *The American Journal of Sociology, 98,* 997–1019.

Quisumbing, A. R. (1997). *Better rich, or better there? Grandparent wealth, coresidence, and intrahousehold allocation* (Discussion Paper No. 23). Washington, DC: Food Consumption and Nutrition Division, International Food Policy Research Institute.

Rogers, A. (1975). *Introduction to multiregional mathematical demography*. New York: Wiley.

Schwartz, C. R., & Mare, R. D. (2005). Trends in educational assortative marriage from 1940 to 2003. *Demography, 42,* 621–646.

Sharkey, P., & Elwert, F. (2010). *The legacy of disadvantage: Multigenerational neighborhood effects on cognitive ability* (Working Paper 2010-06). Madison, WI: Center for Demography and Ecology, University of Wisconsin.

Smith, H. L. (1990). Specification problems in experimental and nonexperimental social research. *Sociological Methodology, 20,* 59–91.

Solon, G. (1992). Intergenerational income mobility in the United States. *The American Economic Review, 82,* 393–408.

Sweeney, M. (2002). Two decades of family change: The shifting economic foundations of marriage. *American Sociological Review, 67,* 132–147.

Szelenyi, I., & Treiman, D. J. (1994). *Social stratification in eastern Europe after 1989: General Population Survey—Provisional codebook*. Unpublished manuscript. Department of Sociology, University of California–Los Angeles.

Taeuber, K. E., & Taeuber, A. F. (1965). *Negroes in cities: Residential segregation and neighborhood change*. Chicago, IL: Aldine Publishing Co.

Treiman, D. J., & Walder, A. (1998). *Life histories and social change in contemporary China—Provisional codebook*. Unpublished manuscript. Department of Sociology, University of California–Los Angeles.

Treiman, D. J., Moano, S. N., & Schlemmer, L. (1996). *Survey of Socioeconomic Opportunity and Achievement in South Africa—Codebook*. Unpublished manuscript. Department of Sociology, University of California–Los Angeles.

Uhlenberg, P. (2009). Children in an aging society. *Journal of Gerontology: Social Sciences, 64B,* 489–496.

Warren, J. R., & Hauser, R. M. (1997). Social stratification across three generations: New evidence from the Wisconsin Longitudinal Study. *American Sociological Review, 62,* 561–572.

Zerjal, T., Xie, Y., Bertorelle, G., Wells, R. S., Bao, W., Zhu, S., et al. (2003). The genetic legacy of the Mongols. *American Journal of Human Genetics, 72,* 717–721.

Zimmerman, D. J. (1992). Regression toward mediocrity in economic structure. *The American Economic Review, 82,* 409–429.