

The Transition to College from a Demographic Perspective:
Past Findings and Future Possibilities

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INTRODUCTION

This essay reviews recent demographic literature on school transitions. I describe how a demographic perspective, by which I mean using methods that are standard in the study of population processes, is a useful way to examine differences in access to and completion of post secondary schooling in the United States. By design, my scope is artificially narrow in that I do not review related research that is decidedly “demographic” but published in the mainstream journals of sociology or economics. Those works are reviewed instead by the field reviewers for those areas. I focus here only on studies that have been published in the past twenty years in the primary demographic journals.¹ In addition, I describe several ways that a demographic perspective can inform future research on the transition to college. I provide several examples from recent studies that take this approach and review some methods and data sets that support research in this area.

As the study of human populations, demography is traditionally associated with research in three main areas: fertility, mortality and migration. Of course, factors that are closely tied with these processes such as marriage, divorce, cohabitation, health, and aging are also key areas in the literature. This emphasis on population renewal and dispersion goes hand in hand with an emphasis on age and timing and changes over the life cycle because these play an important role in the experiences of people across place and time and in aggregate population processes. The timing of fertility or marriage, for example, has important implications for population growth or decline. Similarly, differences in the risk of mortality or migration over the life cycle require

¹ These include *Demography*, *Population Studies*, *International Migration Review*, *Population and Development Review*, and *Family Planning Perspectives*.

Careful analysis of the ages at which events occur and how experiences change as people grow older. Statisticians and demographers have developed numerous methods for the analysis of these types of research questions.

Because educational attainment is a central component of social organization and stratification, it is a key independent variable in nearly all demographic research. Educational attainment, however, is much less often the dependent variable in demographic studies despite the fact that demographic methods are well suited for the study of educational progress and transitions. Like mortality and marriage, school transitions are clearly defined events that are easily studied using standard demographic techniques such as a life table or event history analysis. Of course, to be fair, the demography of schooling and school transitions represents an area that has been in the sociological domain for quite some time. There are certainly many important studies reviewed in the sociology and economics bibliographies assembled for this SSRC project that could be categorized as demographic (see for example, Mare 1980, Mare 1981, Hauser and Wong 1989, and Hauser 1993 to name just a few). Numerous studies of school desegregation in the 1970s and early 1980s, which precede the starting point of this review, also took a demographic perspective (see for example, Taeuber et. al 1981, Taeuber and Wilson 1978). However, a review of the literature on educational attainment published in the demographic journals over the past two decades reveals that there is considerable room for expansion in this area.

EXISTING LITERATURE

Given demography's focus on population processes, it is not surprising that a survey of recent research published in the main demographic journals on the topic of schooling produces few articles. The existing studies can be grouped in three general areas: those that examine the relationship between educational attainment and (1) migration, (2) fertility, and (3) family structure.

Several articles focus on the educational experiences or trajectories of immigrant youth. This is a natural extension of the literature's focus on migration. These studies are concerned with the effect of assimilation or generational status on school enrollment and continuation (Driscoll 1999, Hirschman 2001, Bankston and Zhou 2002, Glick and White 2003). In general,

these studies show what we see in other research about school transitions. Although there are differences by generation status and country of origin, the strongest predictors of educational achievement are family characteristics such as socioeconomic status and educational expectations. Once these factors are controls, differences between groups are modest or nonexistent. There is also some attention to the effects of internal migration, for example residential moves, on the well being of children (Pribesh and Downey 1999). Here, the results show that preexisting differences between those who move versus those who stay explain much of why children who change neighborhoods or schools have poorer educational outcomes.

Another natural extension of the literature is the relationship between fertility timing and educational attainment. There are two contributions to the larger debate about whether teenage childbearing leads to lower completed schooling (see Hoffman 1998 for a review of the larger debate). Klepinger, Lundberg and Plotnick (1995) show that women who have children in their teens complete fewer years of schooling than those who have children later in life even after family background and community context is controlled. Hofferth, Reid and Mott (2001) revisit this question in light of an emerging body of research suggesting that the negative relationship between teenage childbearing and educational attainment is overstated due to unmeasured heterogeneity. The authors find that accounting for unmeasured heterogeneity reduces the negative effect of early childbearing on educational attainment but does not eliminate it. They argue that the negative effects of early childbearing have declined over time because, in recent decades, young women are more likely to complete high school regardless of when they begin childbearing. Early childbearing, however, continues to have a substantial negative impact on rates of post secondary schooling. This negative effect has not declined in recent decades.

The effect of family structure on children's schooling is well-researched in the sociological literature. In the demographic literature, research confirms what has been found elsewhere: children who grow up in two-parent families have better outcomes than those with single parents. Using precise measures of the duration that children live in single parent families, Krein and Beller (1988) find that the negative relationship between educational attainment and living in a single parent family increases over time. This effect is stronger for boys than for girls and most negative during early childhood. There is also evidence that children who live in families with unmarried parents are less likely to go to college and more likely to engage in risky behaviors such smoking, drinking and early sexual activity than those who live in families with

married parents (DeLeire and Kalil 2002). Children who live in multi-generational families, however, fare better even if their parent is unmarried. Teens who live with a single mother and at least one grandparent have outcomes that are similar to teens living with both married parents (DeLeire and Kalil 2002). Extending the emphasis from family role models to role models in other domains, Nixon and Robinson (1999) examine the effects of having female high school faculty on high school completion, college entry and college completion. The authors find a small positive association between having female role models and the educational attainment of young women but find no such effect for boys.

Demographers at government-based agencies such as the U.S. Census Bureau and state departments of education as well as researchers at public policy institutions also conduct numerous studies on changes in population composition by race and ethnicity and how these relate to changes in educational enrollment and attainment. Researchers and policy analysts have been particularly concerned with the school continuation and college entry rates of Latinos. This group is the fastest growing minority group in the U.S. and one that has historically experienced poorer education outcomes than other groups. Many of these studies and reports are not published in the academic journals and I have not reviewed them here. See, for example, reports by the National Center for Education Statistics (NCES) on the educational progress of Hispanic students and minorities in higher education (U.S. Department of Education 2003a; U.S. Department of Education 2001), by the Public Policy Institute of California on the intergenerational progress of Mexican Americans and how immigrant youth are faring in California (Grogger and Trejo 2002; Hill 2004), and by the Texas Higher Education Opportunity Project on the effects of a state-wide law providing automatic college admission to those graduating in the top decile of their high school class (Tienda et al. 2003, Tienda, Cortes, and Nui 2003).

AREAS FOR FUTURE RESEARCH

Much of the research on the educational attainment of disadvantaged groups emphasizes differences in social background, human capital, and unobservable qualities such as motivation or persistence. But this emphasis underplays the role of age, timing, the life course, and intergenerational processes on the accumulation of schooling. These dimensions are central to a

demographic perspective and allow one to examine factors beyond individual characteristics that may influence schooling trajectories. This perspective is complementary to other perspectives and provides an arsenal of well-developed methods for studying the timing of school transitions, the process of educational attainment over the life course, and the changing contours of educational inequality across generations.

Age and timing are key features in the process of educational attainment. At younger ages, school progress is highly age specific. Most children enter kindergarten around age five, and complete high school by age 17 or 18. Among those who ever attend college, most enter college for the first time in the months following high school completion (U.S. Department of Education 1998). For these transitions, age is a key dimension in the schooling process. Indeed, most people enter college for the first time at a juncture in life, namely at the cusp of adolescence and adulthood, when even one or two years difference in age can be associated with different social and educational norms.

Once in college, age patterns become more diffuse. The fact that one quarter of undergraduates are ages 30 and older suggests that a substantial portion of college goes experience some discontinuity in their school careers (U.S. Department of Education 2003b). Moreover, the increasing prevalence of secondary school completion via exam certification (using the General Educational Development (GED) test) means that youth who leave high school without completing a degree have the option of getting this credential and continuing with post-secondary schooling later in life.² When schooling is pursued at nontraditional ages, it is often combined with other activities such as marriage, parenthood and employment. Thus, the expansion of schooling into nontraditional ages suggests a greater need for a life course perspective in the analysis of school transitions. For all these reasons, then, an emphasis on age, timing and the life cycle are important areas overlooked by past research. I discuss each of these dimensions in further detail below and present examples of studies that take this demographic perspective. These studies were not included in the review above because these were not published in the demographic journals. What makes these studies demographic is their theoretical perspective and methods of analysis.

² The likelihood of completing a regular high school diploma after age 20 is nearly zero, therefore, the GED is the main route to high school certification after this age (Maralani 2004). Also, some community colleges do not require a secondary school credential so it is possible to continue on to college without a secondary degree.

Age and Timing

Age is associated with school progress in at least three ways. First, age is correlated with numerous other factors that may delay progress through school. Factors such as grade retention, suspension or expulsion, employment, illness or family crises can extend the time that passes between school transitions. Second, the young adult years mark a part of the life course when people experience numerous life events, including school completion, marriage, fertility, and embarking on a professional career (Rindfuss 1991). In this context, the order or sequence of events is organized by certain normative, age-specific patterns (Hogan 1978; Marini 1984). Some sequences of events (college, first job, marriage, first child) are more common and less difficult than other sequences (marriage, first child, college, first job).

Third, chronological age has a social dimension. Age can be a barrier to continued schooling because of the particular expectations and statuses that are associated with different chronological ages (Binstock and Shanas 1976). Individuals have informal yet shared notions about the right and wrong ages at which to experience different life events. These age-specific norms shape a shared definition of age-appropriate roles, behaviors and time schedules (Elder 1975). Although the completion of a traditional high school degree and first entry into college are highly age-specific events, transitions into and out of college and returning to college later in life are increasingly less age-specific. This means that non-traditional life sequences are more prevalent, or more precisely, new sequences such as college, marriage, child, college are emerging. Taking a demographic perspective gives us a better understanding of these emerging patterns.

This perspective has been central in my own work on disparities in college entry between traditional graduates and GED recipients (Maralani 2004). While traditional graduates complete high school at ages 17 and 18, the timing of GED certification is more diffuse and extends well into the mid and late twenties. Thus, those with a GED generally earn their high school certification and become “eligible” for college at ages when people are much less likely to enter college overall (especially for the first time). These compositional differences play a substantial role in accounting for low rates of college entry among GED recipients net of other factors such as social background and cognitive skills. Focusing only on individual characteristics such as family background or human capital misses this larger demographic and life course dimension.

Controlling for social background and cognitive skills accounts for about half of the difference in rates of college going between traditional graduates and GED recipients. Controlling for differences in age and timing accounts for nearly all the remaining difference between the two groups.

Life Course Perspective

Adults are increasingly more likely to return to school later in life. When they do return, they are likely to combine school with work, marriage and childrearing. This increase in the variability of life sequences calls for studying discontinuous educational trajectories and examining schooling choices within a larger life course perspective. A life course perspective considers multiple dimensions (such school, family, work) and the sequence, timing and interrelatedness of these different dimensions (Xie and Shauman 2003). Three examples follow.

Jacobs and King (2002) examine whether older women are as likely to complete college as younger women. Given that about one-third of college undergraduates are ages 25 and older, they assess the relationship between background characteristics including marital status and fertility and college completion for traditional college goers versus older college attendees. They find that older women are less likely to complete college than younger women but that this difference is explained by their part-time status. Once part-time status and family background are controlled, older women are as likely as younger women to complete their college credential.

The American school system has few age restrictions, which means that adults can choose to pursue uncompleted schooling at later ages. This allows motivated members of traditionally disadvantaged groups the opportunity to upgrade skills and improve their future opportunities by returning to school (Astone et al. 2000). Astone and colleagues use traditional demographic methods such as life tables and hazard rate models to examine spells of school exit and reentry for a sample of inner-city African Americans (from the Pathways to Adulthood Study (PAS)). They find that those with certain discontinuous schooling patterns, such as a school exit and one later reentry, completed about as much schooling as those with one continuous spell.

Finally, Xie and Shauman (2003) argue that understanding why women are underrepresented in the sciences requires taking a life course perspective. The authors examine

different stages in girls' and women's schooling and women's subsequent career trajectories to understand the pathways of long standing gender inequalities in college majors and science careers. Young men are more likely to enter college with the intent of choosing a science-related major and more likely to stay in a science major throughout their college years. But gender differences in math and science test scores and course-taking in high school do not explain young men's higher likelihood of pursuing science. At that point in the schooling process, boys and girls do equally well on these predictors of science achievement. Nonetheless, young women are much less likely than men to go to college with the intent to major in science. A substantial proportion of women who complete a science degree do so by switching into the field from a non-science major sometime during their college career. The authors show that disparities between men and women continue to grow after college as well, as they pursue professional careers in science.

Methods and Data

Demographic methods are particularly well-suited for research on these topics. Life table methods can be used to examine transitions and events within precise intervals of age. Although life tables were developed for the analysis of mortality and fertility, this method maps nicely to the study of educational transitions such as school exits or college entry. Life tables can be multi-state, allowing for entry, departure, and reentry into various states and allow for competing events such as entering a two-year college versus a four-year college.³ In a multivariate framework, hazard rate models allow for the precise modeling of age and timing while employing statistical controls for other factors (Allison 1984). Multilevel models allow for clustering and nesting at several levels, for example the nesting of youths in neighborhoods in schools (Hox 2002). Finally, formal models of population structure and growth allow for the analysis of intergenerational processes. For example, in the context of educational attainment, formal demographic models can incorporate both the direct relationship between parent's schooling and child's schooling and indirect effects that accrue through the population renewal process through mechanisms such as assortative mating, differential fertility or differential mortality. These models capture the interplay of educational and demographic mechanisms and

³ See Preston, Heuveline and Guillot 2001 for an accessible introduction to this technique.

further our understanding how change or stability in these factors in one generation can change the distribution of schooling in the next one.⁴

Demographic methods often require longitudinal data that follow one or more cohort of youth through adolescence, young adulthood and beyond. There are many existing data sets that collect extensive information on school experiences and much of the literature reviewed above draws on these sources. Two of the most utilized sources are the High School and Beyond (HSB) survey and the National Education Longitudinal Study of 1988 (NELS:88), both collected by NCES.⁵ HSB followed two cohorts of youth, one sophomores in 1980 and the other seniors in 1980. Both cohorts were interviewed every other year through 1986. The sophomore cohort was interviewed one more time in 1992. NELS:88 has followed a sample of eighth graders from 1988 to the present, interviewing them every two years.

The National Longitudinal Surveys (NLS), which include surveys of men and women dating back to the mid 1960s, provide rich data on the schooling and work experiences of youth and adults. These surveys include the NLS Mature Women (1968 - 2001, ongoing), NLS Young Women (1968 - 2001, ongoing), NLS Older Men (1966 - 1990), NLS Young Men (1966 - 1981), the NLS Youth (called the NLSY, 1979 - 2000, ongoing), NLS Children of the NLSY (1979 to 2002, ongoing), and NLS 97 (1997 to 2000).

Several other comprehensive longitudinal data sets, while not necessarily designed for studying schooling, include the appropriate variables for investigating school trajectories. These include the Panel Study of Income Dynamics (PSID, 1968-present), the Adolescent Health Survey (AddHealth, 1994-2002) and the National Survey of Family and Health (NSFH, 1987-2002). In addition, it is possible to use repeated cross-sections from the Current Population Survey and the decennial Census to study differences in educational attainment (and college enrollment) by age over time. There are also numerous other smaller data sets available at NCES or collected by university-based research efforts that can readily support demographic analyses schooling.⁶

Longitudinal data provide multiple observations on the same individual, a feature that allows a possible solution to the difficult problem of unobserved heterogeneity in research on

⁴ See Mare 1997 and Preston and Campbell 1993 for examples of formal demographic models of intergenerational processes that relate to group differences in educational attainment and cognitive skills.

⁵ See the NCES web site for more details on these data sets (<http://nces.ed.gov/surveys/hsb/> and <http://nces.ed.gov/surveys/nels88/>).

⁶ See, for example, the Wisconsin Longitudinal Study (<http://dpls.dacc.wisc.edu/wls/index.html>).

schooling. Selection and unobserved heterogeneity are of particular concern in the study of educational transitions because unobserved characteristics such as ability or motivation may cause differential attrition or success in the process of schooling that, if not controlled, can distort estimates of observed factors such as family background on school progress (Mare 1980, Mare 1981). Multiple observations allow for models that net out the unobserved but enduring characteristics of individuals and focus instead on changes from one time period to the next. Alternatively, data on siblings allow the analyst to net out an unobserved family component. Other strategies include instrumental variable analysis and natural experiments (and of course, true experiments).

Analysts in demography, economics and sociology have become increasingly sensitive to the treatment of unobserved heterogeneity and how this may distort results. Several of the studies reviewed above explicitly address this concern (Hofferth, Reid, and Mott 2001; Pribesh and Downey 1999). Like any other field, demographic studies vary in their rigor and quality of findings. Demography is, however, a field that includes several substantive areas that have been on the forefront of the debate on selection bias such as fertility preferences, entry into marriage, divorce, and immigration. Authors in demographic journals are often quantitative sociologists and economists who are at the very least familiar with the challenge of self-selection, unobserved heterogeneity, and generalizable findings. Although not all published work addresses these concerns, the standards of evidence in peer reviewed work are leaning more and more in this direction.

CONCLUSION

There is relatively little research on the transition to college in the demographic literature because this research is generally published elsewhere. Indeed, the distinction between sociological versus demographic research on educational attainment is arbitrary. The two fields are closely tied, with demography usually considered a subfield in sociology. And if one were forced to assign research domains to one or the other of the fields, schooling would fall in sociology's bailiwick. Fortunately, we are spared such unnecessary divisions and adopt it here only for the purpose of conducting a comprehensive, cross-discipline literature review on

transitions to college. In this spirit, I have focused in this essay on the “demographic” literature on schooling, summarizing the existing literature and suggesting directions for future work.

The existing literature on schooling published in the demographic journals is thin. The bulk of the existing studies focus on immigrant children and their advancement in school. This emphasis is quite relevant because race/ethnic differences in school progress are substantial. Asian-American children obtain the most schooling while Hispanic children obtain the lowest levels of schooling. Existing studies examine the relationship between duration of residence and generation status while controlling for factors such as differences in family background, educational aspirations, and parental expectations. There is also some research on the relationship between fertility, family structure and school progress.

Missing from this literature, however, are studies that examine the role of age, timing, and the life cycle in educational attainment. This is in part because these studies are published elsewhere. Nonetheless, there is considerable room for growth in this area and the relevant methods and data are squarely in the demographic domain. This perspective offers the opportunity to apply well-developed theories and methods to the study of educational disparities. The demographic perspective blends well with other approaches and is particularly well suited to understanding school reentry decisions and experiences of adults later in life.

This perspective can provide useful lessons for public policy as well. There has been, for example, a substantial emphasis on early childhood intervention as a way to narrow disparities in educational attainment later in life. However, an analysis of school transitions by age shows an emerging pattern of school continuation later in life. This suggests that public policies that target the barriers faced by adults (such as child care, family housing and flexible class hours) may increase rates of college going at nontraditional ages. Policies that aim to increase rates of college attendance and completion among disadvantaged populations would benefit from a better understanding of the relative influence of age and the life course versus other factors on the likelihood that an individual will pursue or complete post-secondary training.

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