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Back to School: Racial and Gender Differences in Adults' Participation in Formal Schooling, 1978–2013

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Abstract Trends and gaps in educational attainment by race and gender have received much attention in recent years, but reports of these trends have generally focused on traditional-age college students. Little is known about whether and how enrollment in formal schooling among older adults (between 29 and 61 years old) has changed over time. In this article, I draw on Current Population Survey data from 1978 to 2013 to provide the most comprehensive analysis of trends in adults' formal school enrollment by demographic group to date. Results indicate that adult black women in particular have seen relatively high growth rates in their enrollment. Black women were 85 % more likely to enroll in 2011 and 46 % more likely in 2013 than they were in 1978. Their growing advantage relative to other racial-gender groups owes largely to their increasing educational attainment rates overall, given the relationship between prior schooling and enrollment later in life. Taken together, this article's findings suggest that adult enrollment is at once equalizing and disequalizing. On the one hand, it has the potential to narrow the gaps between those with some college experience and those with a four-year degree. On the other hand, patterns of adults' participation in formal education are widening educational gaps between those with and without traditional-age college experience.

Keywords Adult education · Gender · Race · Life course · Trends

Introduction

Media reports point to a growing contingent of adults "over 50 and back in college, preparing for a new career" (Hannon 2015), especially in the wake of a "sour economy" (Jackson 2009; see also Holland 2014; Randall 2009; Rivera 2015;

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Simpson 2013; Wasik 2015; Westervelt 2016). Policymakers, too, have taken note of older adults seeking to augment their skills through additional formal schooling. President Obama stressed that workers acquiring new skills is crucial to keeping them employed and restoring their economic security (Obama 2014). The state of Michigan ran a government-funded program called No Worker Left Behind from 2007 to 2010 to encourage workers, especially those in the struggling automotive industry, to go back to college and retrain for jobs in other industries (Hagland 2013). Similarly, the Plus 50 Encore Completion Program, a two-year grant program sponsored by the American Association of Community Colleges (AACC) to train 10,000 Baby Boomers nationwide for new jobs in health care, education, and social services, aims to make those aged 50 and older more marketable in growing occupations (Navera 2013).

Research has confirmed that formal human capital acquisition has been pushed further into the life course. Not only are individuals of traditional college age taking more circuitous routes through postsecondary education (Andrews et al. 2014; McCormick 2003) or delaying their initial transition into college altogether (Bozick and DeLuca 2005; Roksa and Velez 2012), but older adults have also been enrolling in formal schooling at nontrivial rates. In the fall of 2013, less than one-half of the students enrolled in degree-granting postsecondary institutions belonged to the age group that most readily comes to mind when thinking of college campuses—those aged 18–22—while roughly one-quarter (approximately 5 million students) were at least 30 years old (National Center for Education Statistics 2016: table 303.45).

Research on later-in-life education has typically focused on the individual-level determinants of adults' decision to return to schooling (Cruce and Hillman 2012; Elman and O'Rand 2007; Jacob and Weiss 2011) as well as on the benefits of doing so (Elman and O'Rand 2004; Monks 1997; Taniguchi 2005). This work has found that more-educated individuals and those from socioeconomically advantaged backgrounds are more likely to participate in education later in life, even as doing so leads to lower wage returns than proceeding through postsecondary education on a more normative timetable. At the same time, the extant literature has paid less attention to long-term trends in later-in-life enrollment over time and across cohorts. Further, although some research has found that women and nonwhites are more likely than men and whites to pursue additional education (Elman and O'Rand 2004; Jacob and Weiss 2011), research has largely ignored gender differences within racial groups (or racial differences among women and men) and how those differences may have evolved over time. Because black and white women and men have made varying strides in terms of earlier educational attainment over the past few decades (McDaniel et al. 2011), the research linking prior educational attainment with later-in-life enrollment suggests variation in trends over time among these racial-gender groups.

In this article, I use data from the October supplements of Current Population Surveys (CPS) from 1978 to 2013 to address the following research questions: (1) How has later-in-life formal school enrollment changed over time and across cohorts? (2) Are there racial and gender differences in these long-term trends? (3) How have the substantial changes in the distribution of educational attainment contributed to the observed patterns in later-in-life enrollment? The 3.5-decade period under investigation includes individuals coming of age in the wake of the Civil Rights Act in 1964 and the early wave of affirmative action programs, coincides with large-scale changes in the educational and occupational distributions in the population, and extends past the 2008

U.S. economic recession. This article sheds light on trends and stratification in educational transitions beyond the period in the life course when formal human capital acquisition is often assumed to be complete.

Background

Much attention has been paid to the wide and persistent racial and gender gaps in educational attainment, focusing particularly on how the gap between blacks and whites has evolved over time (e.g., Buchmann and DiPrete 2006; DiPrete and Buchmann 2006; McDaniel et al. 2011). Black and white women and men have all made substantial strides in attainment over the past few decades, but these gains have been uneven. Growth has been especially pronounced among women, who are much more likely than men to enroll in college and to earn a college degree (Buchmann and DiPrete 2006; DiPrete and Buchmann 2006). Among individuals aged 22–28, white women's college completion rates surpassed those of white men in the mid-1980s, whereas black women's advantage over black men has existed since at least 1940 and began to grow in the 1980s (McDaniel et al. 2011). Although women currently outnumber their male counterparts in terms of degree completion across all racial groups, the gender gap is largest among blacks (Harper and Harris 2012).

Racial differences for men and women have also evolved differently over time. Black men have made gains relative to white men, largely due to the latter's slower pace of growth over time, even as black men continue to lag behind whites and black women (McDaniel et al. 2011). White men aged 25–29 were roughly 2.5 times as likely as black men to have completed at least four years of college in 1980 (25.5 % of white men did so, compared with 10.5 % of black men), but that ratio had dropped to 2-to-1 by 2015, with 33.2 % of white men and 16.5 % of black men completing college (U.S. Census Bureau 2016). Black women, on the other hand, have been unable to narrow their gap with white women because both groups have roughly doubled their completion rates over time. In both 1980 and 2015, white women were approximately 1.7 times as likely to have completed at least four years of college as black women; over this time, white women increased their completion rates from 22.0 % to 40.3 %, and black women saw their rates rise from 12.5 % to 24.2 % (U.S. Census Bureau 2016).

At the same time, college enrollment rates have risen faster than completion rates, which have stagnated or even declined conditional on enrollment (McDaniel et al. 2011; Turner 2004). Those who begin but fail to complete postsecondary credentials raise important concerns about stratification. They take on at least some of the financial and opportunity costs of college attendance (Wei and Horn 2013) without realizing many of the labor market returns associated with the completion of credentials (Grubb 2002). Blacks are more likely than whites, and black women are more likely than black men, to be in this liminal status of having some college education but no degree. Among those aged 25–29 in 2015, 17.4 % of white women and 18.8 % of white men attended college but did not complete a degree, and 29.1 % of black women and 25.8 % of black men fell into this category (U.S. Census Bureau 2016). In fact, the narrowing of college enrollment gaps by race/ethnicity has largely been driven by the disproportionately large increases in minority students' enrollment in non-degree-granting and two-year colleges (Baker et al. 2016).

Observing individuals in their 20s necessarily provides a truncated picture of patterns in educational attainment. A fuller understanding of the racial and gendered hierarchies in attainment must look beyond the phase of the life course when education is traditionally thought to be complete. Indeed, sociologists and demographers have become increasingly interested in the ways in which the life course has changed from a set of normative and discrete transitions to a series of overlapping and blurred phases (Elman 2011; Shanahan 2000). In particular, although it made sense at one time to conceptualize the "student-to-worker" transition in the former way—that is, "individuals severed their participation in formal schooling [prior to assuming] other adult roles," such as that of employee (Bills 2000:65)—diverse, extended, and fluid pathways through education have become more prevalent in recent years (Andrews et al. 2014; Mouw 2005; Roksa and Velez 2012). This destandardization of the life course with respect to education varies along racial and gender lines: black students are more likely than white students, and males are more likely than females, to follow delayed or interrupted pathways through college (Bozick and DeLuca 2005; Goldrick-Rab 2006). Beyond the delayed transitions and interrupted enrollment patterns of traditional-age college students, adults further into the life course are choosing to augment their human capital.

Research has capitalized on rich panel data that follow particular cohorts of adults to find that the decision to return to formal schooling later in life is shaped by a number of interconnected factors, including prior and current choices and experiences related to family, work, and education. In general, those who seek and complete additional education later in life tend to be more socioeconomically advantaged—as measured, for instance, by fathers' occupational prestige (Elman and O'Rand 2007), mothers' schooling (Elman and O'Rand 2004), or parents' class (Jacob and Weiss 2011)—than those who do not. Relatedly, those who have attained more years of education earlier in life are more likely to enroll as adults than those who have less prior education (Cruce and Hillman 2012; Elman and O'Rand 2004, 2007; Jacob and Weiss 2011). For some, concerns about job security motivate the pursuit of additional training (Barr and Turner 2015). Adults who expect that they will lose their jobs in the next year are approximately 40 % more likely to participate in education than those who feel their job is secure (Elman and O'Rand 2002). By contrast, those who have more job experience—perhaps indicative of working in a good job with greater security—are less likely to reenroll (Elman and O'Rand 2004, 2007).

Just as racial and gender differences exist in patterns of earlier educational attainment as well as whether more traditional-age students take delayed or winding paths through postsecondary education, research has found that women (compared with men) and members of minority racial/ethnic groups (compared with whites) are more likely to participate in schooling later in life (Elman and O'Rand 2004; Jacob and Weiss 2011). But what of gender differences within racial groups, or racial differences among men and women? Additionally, although the extant scholarship provides important insights about the factors leading to adult school enrollment, it tells us relatively little about how rates of enrollment may have changed over time and across cohorts. In the one study of which I am aware that examines trends over time, Jacobs and Stoner-Eby (1998) found small increases in undergraduate enrollment rates among adults between 1970 and 1990. Even this longer-term investigation, however, ends before the recent attention by the media and policymakers and before the substantial increases in earlier-in-life educational attainment of the past few decades that might precipitate additional changes in the rates at which adults enroll in formal schooling.

The protraction of education deeper into the life course both complicates and is potentially shaped by the patterns of attainment observed earlier in life. More specifically, the trends in prior educational attainment observed among individuals in their 20s might relate to trends in older adults' reenrollment, and to racial and gendered differences therein, in two ways. On the one hand, older adults' enrollment rates among black and white women and men may have risen over time in step with their increasing earlier-in-life education levels insofar as prior attainment facilitates later enrollment (Cruce and Hillman 2012; Elman and O'Rand 2004, 2007; Jacob and Weiss 2011). This possibility suggests that as educational attainment earned earlier in the life course has increased and as racial-gender gaps have persisted, adult participation in additional formal schooling might reinforce and exacerbate those gaps. On the other hand, reentering formal schooling may be a compensatory strategy among adults who stopped their educational career earlier in life, whereby they return to school to complete a previously begun credential in an attempt to catch up to those with more education (Maralani 2011; Taniguchi and Kaufman 2005).

Because black adults, and especially black women, are most likely to have enrolled in college but failed to complete a degree, we might expect these groups to have seen particularly strong growth in later-in-life enrollment over time. If this is the case, adult enrollment could contribute to a further narrowing of the attainment gaps between blacks and whites. Some evidence suggests that this kind of narrowing would translate to benefits in the labor market. For instance, Elman and O'Rand (2004) found that delayed human capital investments play a compensatory function in terms of wages, especially for women who return to college to complete a baccalaureate degree. Further, nonwhites earn roughly the same as whites for the same credentials when they return to school, in contrast to wage differences among blacks and whites who have completed college at more traditional ages (Elman and O'Rand 2004).

In sum, the major changes in the distribution of educational attainment over time have varied by race and gender, with women out-pacing men and black men falling particularly behind black women and whites (McDaniel et al. 2011). Whether and how these patterns matter for educational participation later in life remain open questions. Prior research has focused on the antecedents of enrollment in later adulthood among particular cohorts and periods, but it is unclear (1) how enrollment has changed *across* cohorts and *over* time; (2) how rates of enrollment compare among genders within racial groups, or among racial groups within the two genders; and (3) whether shifts in the educational composition of the population and racial-gender subgroups have shaped these trends. In the next section, I detail the data used in this article to address these questions.

Data and Methods

To examine long-term patterns in adults' formal school enrollment, particularly with respect to race, gender, and prior educational attainment, I draw on data from the 1978–2013 October supplements of the Current Population Survey (CPS).[1] These annual

[1] I use data provided by the Unicon Research Corporation (http://www.unicon.com). Although the October supplement has been fielded since 1968, questions on school enrollment were posed to individuals ages 35 and older beginning in 1978. In other CPS monthly supplements, questions about enrollment are asked only of those 24 years and younger.

surveys are administered to nationally representative samples of about 60,000 households and contain information on school enrollment, household background, and labor market participation. The primary analytical sample comprises black and white women and men aged 29–61, who may be employed, unemployed, or outside the labor force, and who have no missing values on either the outcome variable (enrollment status) or key demographic variables (race, gender, and age).[2] The final analytic sample includes 1,857,905 respondents; the number of respondents in each year ranges from 46,155 in 2000 to 59,398 in 1980.

The October supplement is well suited to the aims of this study: it is the only large-scale micro-level data set to ask older adults about their school enrollment over a long period. At the same time, the CPS is limited by its lack of detailed information about ability, prior academic achievement, health status, and job history and tenure. Although this kind of information would be useful for homing in on the factors that may constrain or enable mid-to-late-adulthood enrollment, I control for a host of other variables that are likely related to job history and tenure and to other (dis)advantages, including gender, race/ethnicity, current educational attainment, occupation, marital status, and family income. Further, measuring enrollment persistence is not feasible. The October respondents are included in other months of the CPS, but given the rotation structure, enrollment questions in these surveys are posed to only those individuals aged 24 years and younger; thus, I cannot examine month-to-month persistence in enrollment. Individuals might also be observed in multiple October surveys (Elman and O'Rand 1998), but others have found that linking individuals across years results in poor match rates (Barr and Turner 2015). Although I am unable to track specific individuals over time, I can examine broad trends in the enrollment experiences of multiple cohorts over a 36-year period. This is key to better understanding differences in age, period, and cohort patterns that cannot be disentangled through longitudinal data on one cohort or through cross-sectional data drawn from a single point in time.

Measures

Table 4 in the appendix reports summary statistics for the variables used in the analyses, which are described further in this section.

Enrollment

The outcome variable of interest measures current enrollment in "regular school," defined by the CPS as primary school or schooling that leads to a high school diploma or a college, graduate, or professional degree. The vast majority of enrolled respondents in the sample (94 %) attend either college or a graduate program. This narrow definition of schooling certainly understates the full extent to which adults are participating in educational activities or upgrading their skills. Indeed, many adults also participate in what the CPS labels "vocational" schooling (Bills 2005; Elman and O'Rand 1998). However, my definition focuses attention on the kinds of education that entail

[2] The cutoff age of 61 removes from the sample those who are most likely to be on the verge of retirement and thus, by definition, least likely to engage in educational activities that could be beneficial in the labor market (Elman and O'Rand 2007).

substantial investments of time, finances, and other resources; are a major determinant of labor market outcomes; and have the potential to produce or enhance skills that are transferable across firms or occupations (Becker 1964).[3] Additionally, this measure of enrollment available in the CPS is less robust than measures available in other data sets. For instance, the longitudinal National Survey of Families and Households—used by Elman and O'Rand (2004) to examine the postsecondary school reentry decision process among adults aged 22–42 in the late 1980s and the wage returns of doing so—contains rich information about the timing of postsecondary education as well as the number of courses taken by individuals. Such data sets, however, do not permit the description of long-term enrollment trends undertaken in this article.

Race and Gender

This analysis centers on trends in enrollment by race and gender. I focus on patterns of formal school enrollment among non-Hispanic whites and non-Hispanic blacks. Gender is coded dichotomously (1 = female, 0 = male).

Prior Educational Attainment

Obtaining a consistent measure of prior educational attainment across the study period requires harmonizing two different categorization schemes. Through 1991, the CPS asked respondents which grade they had attained (ranging from 0 through 18+); a separate "yes/no" question asked whether they had completed that grade. Since 1992, the CPS has asked what grade or degree an individual has completed. I convert both schemes into a series of four dummy variables (Jaeger 1997): (1) individuals are coded as having attained *less than high school* if under the pre-1992 scheme, they responded that they had not completed the 12th grade, or if under the post-1991 scheme, they responded that they had attended through the 12th grade but had not received a diploma; (2) they are coded as having *completed high school* if they completed the 12th grade under the earlier scheme, or were marked as being a high school graduate or equivalent under the later scheme; (3) they are coded as attaining *some college* if they attended through (but did not complete) grade 16 under the earlier scheme, or if they responded that they had either "some college but no degree" or they earned an associate's degree under the later scheme; and (4) they are coded as having *completed at least four years of college* if under the pre-1992 scheme, they completed grade 16 or attended any higher grade (17 or 18+), or if under the post-1991 scheme, they are coded as having completed a bachelor's, master's, professional, or doctorate degree.

Additional Controls

In certain analyses, I control for a host of additional demographic and labor market variables. Demographic and background factors include marital status

[3] Additionally, the vocational school enrollment variable in the CPS does not appear to be complete or consistent over time, especially during the 1980s; multiple years have missing data (1982, 1985, 1986, and 1988), and enrollment rates during 1983–1984 are markedly different than prior and later years.

(coded as a series of dummy variables for never married, currently married, separated, divorced or widowed, or missing); the presence of children in the household (respondents may have no children under age 18, an infant or very young child between ages 0 and 5, a child between ages 6 and 12, or a teenager between ages 13 and 17);[4] and veteran status (coded dichotomously). Given the financial commitment of reenrolling in formal schooling, I also control for one's family income. The CPS October supplement includes a categorical measure of family income. Because these categories contain varying numbers of respondents and represent different income ranges over time (the categories have changed four times since 1978), I construct within-year income quartiles following Bainbridge et al. (2005). Within each year and income category, I assign each respondent a rank using a random-number generator. Each income category's rank begins at one higher than the lower category's maximum rank. For example, if there are 100 respondents in the lowest CPS income category in a given year, then the random-number rank of the first person in the second income category begins at 101. I then use respondents' rank to sort them into quartiles in each year.[5] A fifth category captures those who have missing family income information.

I measure one's labor market position by their occupation, employment status, union membership, and employment in the public sector. The analyses use a 25-category occupation scheme, and include a 26th category—"missing"—to accommodate those with no occupation listed as well as those who are currently not working and who may not have had a prior job to reference when responding to the occupation question.[6] In terms of their employment status, individuals are coded as (1) *employed full-time* if they work at least 35 hours per week, (2) *employed part-time* if they work fewer than 35 hours per week, (3) *unemployed* if they do not have a job but have actively looked for work in the past four weeks and are currently available for work, and (4) *not in the labor force* if they are not employed and are not looking for a job. Employment in the public sector is measured using the CPS's "class of worker" variable, which indicates whether a respondent's current or most recent job is in the public or private sector. Respondents are also asked whether they belong to a labor union or association. For these two variables, I include a "missing" category. In addition to those who were not asked about union membership or sector on account of their employment status, this "missing" category includes union status for years 1978–1983, before the

[4] For households with more than one child, this variable records the age range of the youngest child.

[5] In separate analyses, I tested whether different random-number draws affected the overall results; they did not, suggesting that the rank order from poor to affluent is roughly accurate in each year.

[6] The 25 occupation categories are executive, administrative, and managerial; management-related; professional specialty; technicians and related support; financial sales and related; retail sales; administrative support; firefighting, police, and correctional institutions; farm operators and managers; other agricultural and related; mechanics and repairers; construction trades; extractive; precision production; machine operators, assemblers, and inspectors; transportation and material moving; and nine categories of service occupations: housekeeping and cleaning; protective service; food preparation and service; health care support; building and grounds cleaning and maintenance; personal appearance; recreation and hospitality; child care workers; and miscellaneous personal care and service. These occupation recodes are based on a system developed by Autor and Dorn (2013) (see also Dorn 2009) that reconciles the changes made to the census occupation classification scheme over time.

question was introduced in the CPS October supplement. (Sensitivity analyses show no differences in results if I limit the analyses to only years 1984–2013.)

Finally, I include census geographical division[7] and metro/nonmetro fixed effects to capture at least part of the observed and unobserved geographic variation that might contribute to one's access to schools and to labor market conditions that might encourage reenrollment. For example, living in a metropolitan area likely means that an individual resides closer to more potential schools in which to enroll (Turley 2009), whereas different parts of the country have historically provided varying amounts of public support for higher education programs, which has been shown to boost enrollment and attainment (Titus 2006; Trostel 2012). Research also indicates spatial concentration of human capital attainment as well as the educational requirements of jobs (Domina 2006).

Analytical Strategy

In the first part of the analysis, I present descriptive findings to establish whether and how enrollment in formal schooling among adults aged 29–61 changed over the study period and across cohorts. I also attempt to gain additional traction on the complex set of age, period, and cohort (APC) dynamics that may be related to the racial and gendered trends in later-in-life enrollment. Researchers have long known about the "identification problem" inherent in APC analyses: that is, it is difficult (if not impossible) to untangle the perfect correlations among age, period, and cohort (Glenn 2005). Despite the number of APC approaches that have been proposed, including the use of an intrinsic estimator (Yang 2008; Yang et al. 2004) or cross-classified random-effects models (Yang and Land 2006), they have been hotly contested in the literature (see, e.g., Bell and Jones 2014; Luo 2013; te Grotenhuis et al. 2016). Instead, I follow Wilson et al. (2011) and hold age or cohort groups constant while estimating the relationship between the likelihood of enrollment and birth year or survey year. This strategy helps reduce the collinearity between age and cohort and isolate—to the extent possible—trends across and within periods and cohorts. By looking at changes over survey year (period) or birth year (cohort) while holding constant either cohort or age group, my goal is not to make claims about the precise apportionment of APC effects, but rather to examine temporal variation in enrollment rates and to better understand potential sources of change along the three dimensions of time (age, period, and cohort).

Second, I assess the contribution of compositional changes to trends in each racial-gender group's enrollment rate via nonlinear decomposition techniques based on those developed by Blinder (1973) and Oaxaca (1973). A modified Blinder-Oaxaca decomposition technique for nonlinear regression models decomposes the differential in the prevalence of later-in-life enrollment between two comparison groups into two components: (1) differences in composition, such as the proportion of individuals who have completed at least four years of college; and (2) differences in group-specific rates, such as the relationship between prior educational attainment and the probability of enrolling

[7] The census groups states into nine divisions: New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, and Pacific. These divisions provide finer-grained geographic detail than the Census Bureau's four regional groupings while avoiding the creation of cell sizes that are too small, as the use of states would when estimating models separately by race, gender, and time period.

later in life (Fairlie 1999; Jann 2008; Yun 2004). I decompose the change in enrollment over time, between the start and end of the study period, separately for each racial gender group. To ensure sufficient sample sizes, I define the start and end of the study period in terms of six-year intervals: 1978–1983 and 2008–2013. For categorical independent variables with at least three categories, the decomposition results depend on the choice of the reference (omitted) category. I deal with this problem by normalizing these variables' effects (Yun 2005): that is, I estimate their effects as deviation contrasts from a grand mean.

Findings

Descriptive Age, Period, and Cohort Trends

To begin, I descriptively assess whether and how formal school enrollment among older adults has changed over time, by birth cohort, and across age groups. Figure 1 shows the enrollment rates of black and white women and men aged 29 to 61 over the 3.5-decade period. I present both the raw percentage of adults in each racial-gender group who reported being enrolled (the darker lines) as well as Lowess smoothed lines (the lighter lines) to get a sense of the overall trends. Across the full study period, both black and white women held an advantage over black and white men. At no point between 1978 and 2013 did white men enroll at higher rates than white women; the same is true among blacks. Further, black women enrolled at higher rates than white men. Between 2008 and 2013, black women were roughly three times as likely to be enrolled than white men. White women also held an advantage over black men, although not as large or as consistent as the female-favorable gap between black women and white men. The gap between white women and black men was largest in 1989–1990, when the former were nearly 2.5 times more likely to be enrolled than the latter; more often than not, however, the gap between white women and black men was marginal.[8]

In terms of within-group changes, white men and women's enrollment declined slightly. Roughly 4.5 % of adult white women were enrolled in the early years of the study period, compared with 4.0 % in 2013. Similarly, white men began the study period with an enrollment rate of approximately 3.3 %; by 2013, less than 2.5 % were enrolled. As a result, the gender gap among white adults stayed relatively constant over the study period, with white women enrolling at rates approximately 1.3 to 1.8 times the rates of white men. Black men's enrollment held fairly steady, although they did experience a drop of nearly 2 percentage points in the late 1980s and early 1990s. (I explore this further later when looking at trends by age group.)

In sharp contrast to the patterns of white men and women and black men, black women increased their participation in formal schooling over time. In the early part of the study period, a little less than 5 % of black women were enrolled. Recessions

[8] Although not shown here, trends among Hispanic women and men generally follow the patterns of white men and women in Fig. 1 albeit at lower levels. Hispanic women's enrollment rate held relatively steady between 3.5 % and 3.9 % over the study period, while Hispanic men's rate fluctuated between 2.3 % and 3.0 %. Women and men in the "other" racial category evince relatively steep declines: women in this group saw their enrollment fall from an average of 6.8 % between 1979 and 1983 to 4.8 % between 2009 and 2013, and the men's rate dropped from 8.1 % to 3.7 %.

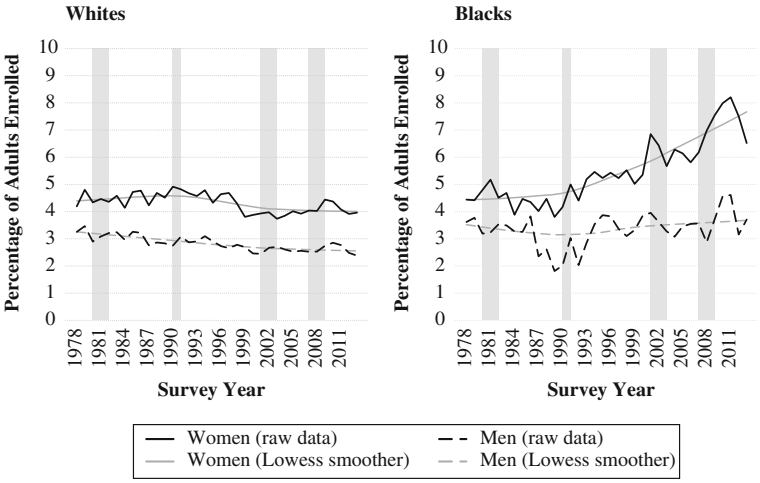

Fig. 1 Adult enrollment in formal schooling by gender and race, over survey year (1978–2013). Author's calculations using the CPS October supplement data. Sample includes adults between the ages of 29 and 61. Percentages are weighted by the appropriate weights. Shading in gray indicates recessionary periods, as defined by the National Bureau of Economic Research

appear to be particularly important boons for enrollment among black women. During recessionary periods—or, in the case of the recession in the early 2000s, right before—black women substantially increased their transitions into formal schooling. Their enrollment peaked as the country was still reeling from the Great Recession in 2010 and 2011 at approximately 8.2 % before settling at approximately 7 % in 2012 and 2013. In 2011, black women's enrollment was 85 % higher than it was in 1978. This Great Recession enrollment growth was driven largely by those who were either unemployed or no longer in the labor force. In the years immediately prior to the recession (2003–2007), 5.7 % of unemployed black women and 5.1 % of those out of the labor force were enrolled; in the years during and following the recession (2008–2013), those enrollment rates increased to 9.5 % and 7.2 %, respectively. These increases are much larger than those experienced by white women and white and black men who were either unemployed or out of the labor force over the same period.

An examination of intercohort trends reveals similar patterns. Because individuals born in various years are not observed at exactly the same age, I adjust the data for differences in the age at observation by regressing the likelihood that one is enrolled on separate intercepts for each birth year and a quadratic specification of age (i.e., $\beta Age + \beta Age^2$). I estimate separate logistic regression models for each of the four racial-gender groups to obtain their predicted enrollment rates in each birth year (the darker lines) as well as the Lowess smoothed trends (the lighter lines) displayed in Fig. 2. White women and men's enrollment rates remained relatively flat across birth cohorts, and white women's rates fluctuated at approximately 1.5 times white men's rates in each birth year. Black men's enrollment increased from roughly 1 % to approximately 5 %, whereas black women's enrollment rose from less than 2 % in the first few birth years to an average of approximately 10 % among the last few. Focusing on the Lowess smoothed line, there is an apparent inflection point among black women around cohorts born in the early to mid-1960s—that is, among those born toward the end of the Baby

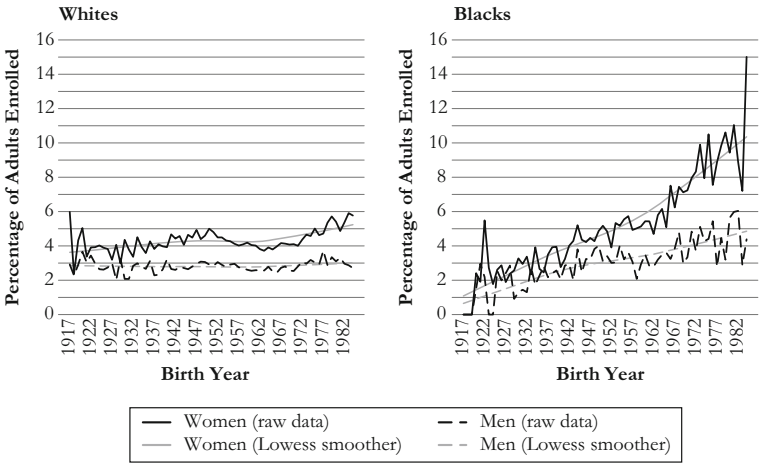

Fig. 2 Adult enrollment in formal schooling by gender and race, over birth year (1917–1984). Author's calculations using the CPS October supplement data. Sample includes adults between the ages of 29 and 61. Percentages are weighted by the appropriate weights

Boomer generation—where adult enrollment begins to increase at a faster rate. A similarly timed albeit slighter inflection point occurs among white women as well. Across birth cohorts, the enrollment gap between black women and the other groups grew considerably. Although part of the upward trend, even with the correction for age, likely reflects the fact that the later cohorts are on average younger in the data, the slope of black women's trend—especially in comparison with the other groups—is striking.

How do changes in enrollment vary by age among these four racial-gender groups? Figure 3 shows the percentage of adults who are enrolled by age group across six-year time intervals. That younger age groups typically out-enrolled their older counterparts is consistent among black and white women and men. Again, though, growth in black women's enrollment rates stands out. Among all age groups, black women's enrollment was higher in 2008–2013 than it was in 1978–1983, with the largest gains occurring for those aged 29–34 (from 8.5 % to 14.4 %), 35–39 (from 6.0 % to 11.5 %), and 40–44 (from 3.8 % to 7.2 %). Enrollment rates among black women aged 50–54 also doubled across the study period—from 2.0 % to 4.1 %. White women and men and black men evinced much lower growth—and often small declines—in their age-group-specific enrollment rates. While white women aged 29–34 saw their enrollment grow from 8.0 % to 8.9 %, the enrollment rates of all other age groups held relatively steady. The same is generally true among white men, although even their youngest age group saw no long-term increase in enrollment over time.

The pattern is more complicated for black men. Their highest enrollment rate occurred among those aged 29–34 in 1978–1983; this group's enrollment rate then dropped from 8 % to less than 5 % in the next two periods before rising again. One potential explanation for this group's relatively high enrollment rate in the early part of the period and their subsequent decline concerns the timing of affirmative action policies. This group was in their traditional college years (18–22) in the mid- to late 1960s, a period characterized by the early wave of affirmative action programs in higher education that led to a rise in black

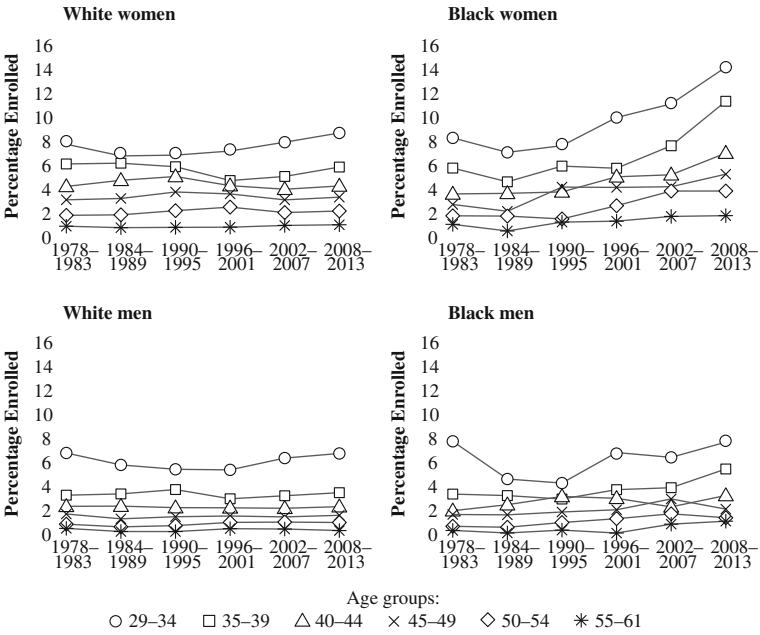

Fig. 3 Adult enrollment in formal schooling by age and period. Author's calculations using the CPS October supplement data. Percentages are weighted by the appropriate weights

educational attainment (Bowen and Bok 1998). The relatively high enrollment rate among black men aged 29–34 in 1978–1983, then, may reflect their ability to build on the unprecedented educational gains made earlier. Affirmative action policies were then scaled back in the years following, potentially contributing to the decline among black men aged 29–34 between 1984–1989 and 1990–1995.

Further clarification about the relationships among age, period, cohort, and later-in-life enrollment is provided by the analyses in Table 1. In panel A, I hold age group constant and regress the likelihood of enrollment on birth year, thereby reducing the association between age and cohort and focusing on intercohort changes. In panel B, I again hold age group constant but regress the likelihood of enrollment on survey year in order to home in on changes over time within age groups. In panel C, I regress the likelihood of enrollment on survey year within cohort groups to examine intracohort changes over time. Although this analysis helps to describe the overall trends in enrollment, it does come with limitations. Like other APC strategies, this approach cannot completely eliminate the correlations among the three variables. For instance, in the age groups in panel A, the coefficients may capture cohort effects as well as residual intracohort effects. Additionally, conducting the analyses within age groups truncates the cohort range in panels A and B, whereas both the age and year ranges are often truncated when the analyses are conducted within cohorts in panel C. Finally, the analyses treat the relationships between enrollment and birth year in panel A and survey year in panels B and C as linear. Although there may well be nonlinear relationships, the coefficients presented in Table 1 do provide a sense of general trends over cohort and period within age and cohort categories.

Table 1 Changes in enrollment across time and cohort

A. Intercohort Change in Enrollment, by Age Group

Age Categories	Year Range	Cohort Range	All	Black Women	White Women	Black Men	White Men
Full sample	1978–2013	1917–1984	0.033***	0.044***	0.028***	0.039***	0.036***
29–34	1978–2013	1944–1984	0.009***	0.026***	0.007***	0.011**	0.004***
35–39	1978–2013	1939–1978	0.002*	0.029***	–0.005***	0.019***	0.001
40–44	1978–2013	1934–1973	0.001	0.024***	–0.004*	0.010	0.000
45–49	1978–2013	1929–1968	0.005***	0.024***	0.002	0.014*	0.001
50–54	1978–2013	1924–1963	0.011***	0.034***	0.006***	0.023**	0.010***
55–61	1978–2013	1917–1958	0.011***	0.027***	0.010***	0.047***	0.002

B. Change in Enrollment Over Time, by Age Group

Age Categories	Cohort Range	Year Range	All	Black Women	White Women	Black Men	White Men
Full sample	1917–1984	1978–2013	–0.002***	0.020***	–0.005***	0.007***	–0.008***
29–34	1944–1984	1978–2013	0.006***	0.025***	0.005***	0.009*	0.001
35–39	1939–1978	1978–2013	0.001	0.028***	–0.006***	0.018***	–0.001
40–44	1934–1973	1978–2013	0.000	0.024***	–0.005**	0.008	–0.001
45–49	1929–1968	1978–2013	0.003**	0.023***	0.000	0.013*	0.000
50–54	1924–1963	1978–2013	0.010***	0.034***	0.004*	0.023**	0.009**
55–61	1917–1958	1978–2013	0.007***	0.023***	0.005*	0.044***	–0.002

C. Change in Enrollment Over Time, by Cohort

Cohort Categories	Age Range	Year Range	All	Black Women	White Women	Black Men	White Men
Full sample	29–61	1978–2013	–0.002***	0.019***	–0.003***	0.007***	–0.008***
1917–1929	49–61	1978–1990	–0.103***	–0.121**	–0.108***	–0.049	–0.098***
1930–1934	44–61	1978–1995	–0.115***	–0.087***	–0.112***	–0.077	–0.137***
1935–1939	39–61	1978–2000	–0.091***	–0.054***	–0.089***	–0.102***	–0.106***
1940–1944	34–61	1978–2005	–0.076***	–0.054***	–0.078***	–0.082***	–0.078***
1945–1949	29–61	1978–2010	–0.072***	–0.061***	–0.066***	–0.072***	–0.087***
1950–1954	29–61	1978–2013	–0.068***	–0.041***	–0.062***	–0.062***	–0.088***
1955–1959	29–58	1984–2013	–0.059***	–0.036***	–0.054***	–0.039***	–0.080***
1960–1964	29–53	1989–2013	–0.055***	–0.025***	–0.050***	–0.047***	–0.077***
1965–1969	29–48	1994–2013	–0.054***	–0.026***	–0.045***	–0.062***	–0.078***
1970–1974	29–43	1999–2013	–0.058***	–0.034**	–0.045***	–0.062***	–0.087***
1975–1984	29–38	2004–2013	–0.046***	–0.020	–0.048***	0.006	–0.066***

Notes: Data come from the CPS October supplements, 1979–2013. Estimates are weighted. Unstandardized coefficients are shown. I also estimated standardized coefficients (not shown to conserve space but available upon request), which evince substantively similar patterns.

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

The within-age-group coefficients in panel A of Table 1 largely capture how later-in-life enrollment changed across birth years (cohorts). In the full sample, a moderate and positive relationship is evident between the likelihood of enrollment and birth year. Reflecting the patterns observed in Fig. 2, this overall relationship is stronger for black women and men than for white women and men.[9] Also noteworthy are cohort differences across the age groups by racial-gender group. Although the relationship is fairly strong among all age groups for black women—indicating that enrollment rates increased among all age groups across cohorts—the growth was particularly strong for those aged 50–54 and, to a slightly lesser extent, 35–39. Although growth was not as marked in most age groups for black men relative to black women, black men too evince particularly notable growth among those aged 20–29, 50–54, and 55–61 compared with other age groups. For white women and men, the pattern is much flatter. White women's enrollment even declined slightly across cohorts among those aged 35–39 and 40–44.

In assessing the relationship between the likelihood of being enrolled and survey year within each age group, the results in panel B follow similar patterns as those in panel A. Black women evinced substantial growth over time, both in the full sample and within each age group. In this way, the striking rise in enrollment among black women evident in Fig. 1 is not exclusively accounted for by gains made by this group's youngest age groups. Black men's growth over time is relatively flatter, except for within age groups 35–39, 50–54, and 55–61. White women and men's enrollment remained largely unchanged, and in some cases declined, over time and within age groups.

Finally, in panel C, the likelihood of enrollment is regressed on survey year within cohorts that generally cover five-year spans; the first (1917–1929) and the last (1975–1984) cohorts cover longer spans given their smaller sample sizes and more restricted age ranges. The coefficients provide a sense of the within-cohort change for individuals born in distinct cohorts. Perhaps unsurprisingly, as cohorts progress through time, the members of each of the four racial-gender groups become less likely to be enrolled in formal schooling. What is interesting, however, are the distinct period differences across the cohort categories by race and gender. Among black women, the size of the coefficients generally declines monotonically as one moves from the earliest to the latest cohorts, indicating a stronger education-period relationship among cohorts born earlier relative to those born more recently. A similar pattern emerges for white women, but the decline across cohort categories is not as steep as among black women. By contrast, nonsignificant coefficients for black men born in cohorts 1917–1929, 1930–1934, and 1975–1984 suggest that period is often unrelated to enrollment. The cohort-specific relationships between enrollment and period for white men are all significantly negative with smaller variation than the other racial-gender groups.

Taken together, the analyses in Table 1 show an increase over time and across cohorts in the likelihood that an adult enrolls in formal schooling later in life among black women and, to a lesser extent, among black men. White women and men evince little such change. Further, while all groups were less likely to be enrolled over time

[9] The overall differences between black women and white women, between black women and white men, between white women and black men, and between white women and white men are statistically significant at $p < .001$; the difference between black women and black men is statistically significant at $p < .05$; and the difference between black men and white men is statistically significant at $p < .10$. I tested the significance of differences between the unstandardized coefficients using $z = \frac{b_1 - b_2}{\sqrt{se_{b_1}^2 + se_{b_2}^2}}$ (Cohen and Cohen 1983).

within cohorts, this pattern changed for black and white women such that participation in formal schooling appears to have been pushed further into the life course for those born in more recent cohorts relative to those born in earlier cohorts.

Accounting for Compositional Changes in Educational Attainment

The analyses thus far align well with prior research on educational attainment and transitions among both younger and older cohorts. By the start of this study's observation period, white and black women between the ages of 22 and 28 were already completing college at higher rates than their male counterparts (McDaniel et al. 2011); thus, their advantage earlier in the life course may have manifested as a female-favorable enrollment gap later in life (Cruce and Hillman 2012; Elman and O'Rand 2004, 2007; Jacob and Weiss 2011). To explore this further, I next ask how enrollment changed across levels of educational attainment.

Table 2 breaks down enrollment rates by race, gender, period (categorized into six-year intervals), and level of educational attainment. The table also shows how the proportion of adults with a given level of education changed over the 3.5-decade period. For all racial-gender groups, and in nearly all time intervals (with the exception of black men during the 1990s), those with some college (but no degree) had the highest enrollment rates compared with those with other levels of education. At the same time, the enrollment rates of those with some college declined among black and white women and men from 1978–1983 to 2008–2013, as did the enrollment rates of adults with at least four years of college. If the enrollment rates among these individuals decreased over time, what accounts for the fairly steady overall enrollment rate among white women and men and black men, and for the dramatic rise in enrollment among black women? The answer may lie in the increasing levels of prior educational attainment for these groups, as evident in the last column of Table 2. Indeed, the proportion of black women with at least some college more than doubled over the study period. Although not shown here, these patterns in adults' enrollment with respect to prior educational attainment are substantively similar across cohorts.

The nonlinear decomposition analysis presented in Table 3 quantifies how much of the difference in enrollment over time is due to changes in composition (the changing characteristics, particularly educational attainment, of individuals over time) or coefficients (the changing relationship of these characteristics to enrollment). The models summarized in Table 3 use prior educational attainment, labor market factors, and other controls to predict the difference in enrollment for each race-gender group between two periods: two six-year intervals for the beginning (1978–1983) and end (2008–2013) of the study period.[10] Logistic regression models showing the overall relationships across the study period between enrollment and the covariates used in the decomposition analysis are provided in Table 5 of the appendix.

Over the 3.5-decade period, enrollment among adult black women increased more than 2.2 percentage points, and the enrollment rate among black men grew by only one-half percentage point but declined among white women and men. The increase among black women was driven almost entirely by changes in their composition and, more specifically, in their educational attainment composition. In other words, black women's enrollment

[10] Comparisons within racial-gender groups between other time periods and the period spanning 2008–2013, as well as comparisons between cohort categories, yield similar results.

Table 2 Enrollment by educational attainment, race, and gender, 1978–2013

	Enrollment							Attainment Share		
	1978–1983	1984–1989	1990–1995	1996–2001	2002–2007	2008–2013	Δ	1978–1983	2008–2013	Δ
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Black Women										
<High school	1.3	1.6	2.3	1.8	2.9	2.5	1.86	40.4	10.8	0.27
High school	2.1	1.2	1.6	2.0	2.0	2.6	1.25	34.5	31.6	0.92
Some college	15.1	11.4	10.2	9.6	10.0	12.3	0.81	15.7	33.2	2.12
4+ years college	11.4	7.5	8.0	9.2	8.9	9.5	0.83	9.4	24.3	2.59
White Women										
<High school	1.1	1.2	1.1	1.0	1.2	1.2	1.09	19.4	4.9	0.25
High school	1.1	0.8	1.0	1.0	1.1	1.2	1.09	44.7	27.0	0.60
Some college	10.7	10.1	9.2	6.7	6.0	6.7	0.62	19.4	30.6	1.58
4+ years college	10.2	8.1	6.8	6.2	5.1	4.5	0.45	16.4	37.5	2.28
Black Men										
<High school	0.9	0.5	0.9	1.1	1.5	1.6	1.71	42.8	11.9	0.28
High school	1.1	0.9	0.5	1.3	1.0	1.4	1.36	31.4	39.0	1.24
Some college	10.7	7.5	5.5	6.4	6.2	6.3	0.59	15.7	28.8	1.84
4+ years college	10.6	6.3	8.2	6.7	5.5	6.0	0.56	10.1	20.3	2.01
White Men										
<High school	0.6	0.6	0.7	0.7	0.7	0.5	0.88	20.2	6.4	0.32
High school	0.8	0.6	0.6	0.6	0.7	0.8	0.95	32.9	30.8	0.94
Some college	6.2	5.7	5.4	4.3	4.1	4.4	0.70	20.4	27.2	1.33
4+ years college	5.8	4.8	4.3	3.7	3.6	3.3	0.56	26.5	35.6	1.34

Notes: Data come from the CPS October supplements, 1978–2013. Weighted percentages are presented. The sample is restricted to men and women aged 29–61. Columns 1–6 show the percentage of adults who are enrolled by racial-gender group, level of educational attainment, and time interval (percentages may not sum exactly to 100.0 because of rounding); columns 8–9 show the percentage of adults with a given level of educational attainment in the first and last time intervals for context; columns 7 and 10 (labeled Δ) provide the ratio of the percentage enrolled (or with a given education level) in the last interval to the percentage in the first interval.

Table 3 Decomposition of the change in enrollment among black and white women and men (1978–1983 to 2008–2013)

	1978–1983 to 2008–2013, Change Due to:			Difference (black women – other group), Difference in Change Due to:		
	Comp.	Rates	Total	Comp.	Rates	Total
Black Women						
Education[a]	2.11	–0.22				
Occupation[b]	0.65	–0.51				
Employment Status[c]	–0.14	–0.74				
Age[d]	–0.41	–2.42				
Other[e]	0.20	3.71				
Total	2.40	–0.17	2.23			
White Women						
Education[a]	1.49	0.01		0.62	–0.23	
Occupation[b]	0.23	0.14		0.42	–0.65	
Employment Status[c]	–0.09	–1.18		–0.05	0.44	
Age[d]	–0.39	–3.99		–0.02	1.57	
Other[e]	0.10	2.57		0.10	1.14	
Total	1.34	–2.44	–1.10	1.06	2.27	3.33
Black Men						
Education[a]	0.61	–0.28		1.50	0.06	
Occupation[b]	0.16	–0.13		0.49	–0.38	
Employment Status[c]	–0.05	–0.14		–0.09	–0.60	
Age[d]	–0.18	0.11		–0.23	–2.53	
Other[e]	–0.10	0.51		0.30	3.20	
Total	0.43	0.07	0.50	1.97	–0.24	1.73
White Men						
Education[a]	–2.18	–0.02		4.29	–0.20	
Occupation[b]	–0.23	–0.01		0.88	–0.50	
Employment Status[c]	0.10	0.10		–0.24	–0.84	
Age[d]	1.32	–1.53		–1.73	–0.89	
Other[e]	0.67	1.16		–0.47	2.55	
Total	–0.32	–0.28	–0.60	2.72	0.11	2.83

Notes: Data come from the CPS October supplements, 1978–2013. The sample is restricted to those with no missing information about their enrollment status, race, gender, or occupation. Estimates are weighted. "Comp." refers to the amount of the difference attributable to changes in composition, and "Rates" refers to the amount of the difference attributable to coefficient changes. "Total" refers to the amount of the difference due to composition + rates. Decomposition is performed with Stata's *oaxaca* command.

[a] Education consists of four dummy variables: less than high school, high school, some college, and at least four years of college.

[b] Occupation is measured with 25 categories.

[c] Employment status consists of four dummy variables: employed full-time, employed part-time, unemployed, and not in the labor force.

[d] Age is measured continuously.

[e] "Other" represents the vector of additional control variables (see earlier discussion of measures as well as models in Table 5 in the appendix): marital status, parental status, family income quartile, public sector employment, veteran status, metro status, and census geographic divisions.

would have increased by roughly one-tenth of a percentage point (or 2.11 percentage points lower than the actual change) had their educational attainment remained fixed at the 1978–1983 levels. Black men's smaller increase in enrollment over time was similarly driven largely by changes in composition, white women's decrease was due mostly to changes in the relationship between the demographic and labor market factors and enrollment, and the sources of white men's decrease were more evenly split between changes in the composition and rates components. Interestingly, changes in educational composition contribute positively to the difference in enrollment rates between the start and end of the study period for all groups except white men.

In a similar way that much of the increase in black women's enrollment rate was due to changes in composition (particularly in terms of educational attainment), a greater proportion of the divergence in enrollment between black women and black and white men was owed to divergence in the educational composition of these subgroups. This finding likely reflects the diverging college enrollment and completion rates favoring black women compared with black men as well as the narrowing of gaps between black women and white men over the past few decades (McDaniel et al. 2011). By contrast, the divergence in enrollment between black and white women over time stemmed largely from divergence in enrollment risks. Examination of results from logistic regression models estimated separately by race-gender group indicates some important differences between black and white women in the relationships between some explanatory variables and enrollment (see Table 5 in the appendix). For instance, although family income generally is negatively related to enrollment for white women, this relationship is not evident for black women. Additionally, as Fig. 3 and panel B in Table 1 suggest, the relationship between age and enrollment may have changed more for black women, who over time and across cohorts became more likely to enroll at higher ages compared with white women.

Conclusion

Patterns of educational attainment have changed in large and fundamental ways over the past few decades. Women caught up to and surpassed men in their college enrollment and completion, and black women in particular widened their advantage over black men (Buchmann and DiPrete 2006; DiPrete and Buchmann 2006; McDaniel et al. 2011). The timing of postsecondary enrollment and completion also changed, such that individuals are delaying their initial transition into college and taking more circuitous pathways through higher education once there (Andrews et al. 2014; Bozick and DeLuca 2005; Mouw 2005; Roksa and Velez 2012). Using nationally representative data from 1978 to 2013, I offer additional evidence on long-term changes in the timing and patterning of educational attainment. In particular, this article extends existing research on older adults' educational participation, which has generally focused on the antecedents of reenrollment within particular cohorts, by providing a more comprehensive view of how enrollment among older adults across racial-gender groups has evolved across cohorts and over the period of study.

Although black women continue to lag behind white women and men in terms of education attained earlier in life (McDaniel et al. 2011), this analysis shows that black women are catching up as they enroll later in life. Not only do older black women hold an advantage over white women and black and white men, this advantage has grown

substantially over time and is robust when controlling for education, occupation, and a host of other measurable factors associated with later-in-life educational attainment and participation. The particularly large enrollment rate among adult black women with some college but no degree (more than 12 % in 2008–2013, compared with 6.7 %, 4.4 %, and 6.3 % of white women, white men, and black men, respectively) suggests that black women may be building on the gains they have made during the more traditional college years. Indeed, results of a decomposition analysis illustrate how shifts in the population educational composition explain much of the variation over time in black women's later-in-life enrollment as well as their divergence from black and white men. The relationship between prior educational attainment and later-in-life enrollment does not appear to have changed among black women; rather, the increase of black women in the "new forgotten half" (Rosenbaum et al. 2015)—those with some college experience but no degree—has precipitated their growing return to formal schooling.

At the same time, the data do not present an unqualified story about those very far behind catching up on educational attainment through later-in-life enrollment. Educational careers evince path dependence, such that how much education one obtains earlier in life matters for later school entry (Elman and O'Rand 2007). And results indicate that those with at most a high school diploma are much less likely to reenroll than those with at least some college experience; this is true across racial and gender groups. Further, black men remain the most disadvantaged of the four racial-gender groups in terms of earlier-in-life educational attainment (McDaniel et al. 2011), and their overall stagnant rates of later-in-life enrollment over time provide no indication that this gap is closing—but in fact may be widening—as individuals age.

At first glance, school enrollment in later adulthood runs counter to the predictions of conventional status attainment and human capital models "that investment should occur early" and "that spending for such training may be either irrational or a form of consumption rather than investment" (Corman 1983:247–248). Yet, particularly among black women, education pursued later in life might serve an equalizing function. More education, even earned later in life, is better than less in terms of securing labor market rewards, such as wages and stable employment (Elman and O'Rand 2004). Indeed, there are strong incentives to participate in schooling across the life course, particularly for those who exit the normative college years with lower attainment. The labor market has undergone profound changes in the last few decades—including the decline of manufacturing and the growth of the information and service sectors—that have "reshaped the labor market into an hourglass with little middle ground between the security afforded by professional careers and the insecurity of low-wage unskilled work" (Smith et al. 2016:2). In this way, life chances and labor market outcomes have become increasingly tied to educational attainment as jobs have become more tenuous and have increasingly required postsecondary credentials (Barr and Turner 2015; Elman 2011; Elman and O'Rand 2002, 2007; Shanahan 2000). The investment in additional education during adulthood, then, especially among black women compared with white women and men, can be understood as a strategy to achieve greater socioeconomic parity with their more privileged counterparts (Elliott and Smith 2004; Mangino 2014). This relationship between macroeconomic conditions and later-in-life enrollment is evident in the particularly large gains that black women seem to have made during recessionary periods.

Furthermore, the fact that enrolling in formal schooling entails financial and opportunity costs—which would seem to render it an irrational investment or put it out of reach of the relatively disadvantaged—is perhaps mitigated by the expansion of the educational market in the United States over the past few decades. Open-access institutions, especially in the public two-year and for-profit sectors, have grown in number and enrollment, making it easier for traditionally underserved groups to take advantage of higher education (Flashman 2013; Jepsen and Montgomery 2009). In fact, this expansion has been cited as one reason for the reversal of the male-female gap in earlier college completion (Flashman 2013). Similar patterns in access and affordability may help explain the consistent female-favorable adult enrollment rates among whites and the growing female-favorable rates among blacks despite the relative disadvantages these groups face in the labor market compared with men.

This article represents an extension to prior research on the processes of educational attainment and stratification across the life course. An exhaustive treatment of this phenomenon's individual-level causal mechanisms or its consequences is beyond the scope of this article (for examples of important work that provides such an analysis, see Elman and O'Rand 2004, 2007). The present analysis of CPS data does, however, offer several complements to extant analyses of panel data. The cross-sections pooled here cover a period of three and a half decades, and large yearly sample sizes make it feasible to study what is ultimately a relatively rare (albeit by no means trivial) occurrence for distinct racial-gender groups. Also, the data include information necessary to account for labor market conditions, such as occupational sorting and employment status, which might enable or constrain additional human capital acquisition later in life. To fully understand the ways in which later-in-life enrollment varies across different periods, age groups, and cohorts, large-scale studies like this one would pair well with additional smaller-scale quantitative investigations of panel data and qualitative studies that can capture more fully the ways in which prior educational choices and experiences and other socioeconomic circumstances push and pull adults back into school.

In describing changes in formal school enrollment among black and white adult women and men, this article's findings have implications for the development of race and gender gaps in higher education more broadly. Adult enrollment is at once equalizing and disequalizing. On the one hand, it has the potential to narrow the gaps between those with some college experience and those with a four-year degree. Such equalizing potential may be particularly salient for black women, who are not only the most likely to complete some (but less than four years of) college but have also seen their later-in-life enrollment expand faster than other groups. On the other hand, patterns of adults' participation in formal education are widening educational gaps between those with and without any traditional-age college experience—disproportionately leaving black women and men further behind their white counterparts. Education at midlife is likely to continue (Elman and O'Rand 2004), and so research on adults' formal school participation stands to provide a more complete understanding of how educational stratification develops over time and over the life course.

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Appendix

Table 4 Descriptive statistics, 1978–2013

	Full Sample	Black Women	White Women	Black Men	White Men
Enrolled	0.037	0.057	0.043	0.034	0.028
Female	0.513				
White	0.867				
Black	0.133				
Age	43.94	43.06	44.15	43.01	44.00
Educational Attainment					
Less than high school	0.115	0.195	0.097	0.208	0.107
High school	0.344	0.353	0.357	0.376	0.324
Some college	0.261	0.275	0.270	0.249	0.250
At least four years of college	0.281	0.177	0.276	0.167	0.319
Additional Controls					
Family income: 1st quartile	0.209	0.439	0.192	0.361	0.164
Family income: 2nd quartile	0.221	0.218	0.221	0.238	0.218
Family income: 3rd quartile	0.232	0.136	0.237	0.170	0.251
Family income: 4th quartile	0.241	0.089	0.254	0.116	0.271
Family income: Missing	0.098	0.119	0.095	0.116	0.095
Never married	0.130	0.265	0.089	0.251	0.131
Married	0.686	0.396	0.712	0.538	0.730
Separated	0.037	0.113	0.030	0.077	0.025
Divorced or widowed	0.148	0.226	0.169	0.134	0.115
No children under 18	0.552	0.515	0.547	0.594	0.557
Oldest child: 0–5 years	0.165	0.167	0.156	0.167	0.174
Oldest child: 6–12 years	0.249	0.284	0.252	0.233	0.241
Oldest child: 13–17 years	0.211	0.261	0.219	0.190	0.198
Veteran	0.145	0.016	0.011	0.246	0.290
Employed full-time	0.587	0.498	0.453	0.621	0.736
Employed part-time	0.185	0.173	0.243	0.130	0.135
Unemployed	0.034	0.058	0.028	0.068	0.032
Not in labor force	0.193	0.270	0.277	0.181	0.096
Public sector	0.140	0.191	0.144	0.158	0.124
Union	0.025	0.026	0.018	0.036	0.030
Missing union	0.854	0.854	0.863	0.846	0.845
N	1,857,905	116,063	848,908	85,475	807,459

Notes: Data come from the CPS October supplements, 1978–2013. Weighted means and proportions are presented. The sample is restricted to men and women aged 29–61.

Table 5 Odds ratios from logistic regressions predicting enrollment among adults aged 29–61, overall and by race and gender, 1978–2013

	Overall	Black Women	White Women	Black Men	White Men
Female	1.276*** (0.016)				
Black	1.214*** (0.030)				
Female × Black	1.085** (0.032)				
Educational Attainment					
High school (ref. = less than high school)	0.984 (0.028)	0.902 (0.061)	0.986 (0.042)	0.857 (0.092)	1.133* (0.062)
Some college	7.029*** (0.186)	5.217*** (0.325)	7.714*** (0.303)	4.999*** (0.491)	7.914*** (0.401)
At least four years of college	5.265*** (0.147)	4.043*** (0.291)	5.372*** (0.220)	4.668*** (0.507)	6.557*** (0.347)
Additional Controls					
Age	0.922*** (0.001)	0.931*** (0.002)	0.931*** (0.001)	0.920*** (0.003)	0.901*** (0.001)
Family income: 2nd quartile (ref. = 1st)	0.832*** (0.012)	0.984 (0.042)	0.824*** (0.017)	0.888 (0.059)	0.826*** (0.022)
Family income: 3rd quartile	0.785*** (0.012)	0.980 (0.050)	0.806*** (0.017)	0.890 (0.065)	0.774*** (0.021)
Family income: 4th quartile	0.709*** (0.012)	1.007 (0.061)	0.783*** (0.017)	0.809* (0.067)	0.646*** (0.019)
Family income: missing	0.721*** (0.015)	0.933 (0.052)	0.727*** (0.021)	0.804* (0.071)	0.668*** (0.025)
Married (ref. = never married)	0.888*** (0.013)	0.935 (0.038)	0.735*** (0.016)	1.186** (0.077)	1.148*** (0.029)
Separated	1.067* (0.027)	1.087 (0.059)	1.094* (0.041)	1.185 (0.113)	1.026 (0.056)
Divorced or widowed	1.149*** (0.019)	1.170*** (0.053)	1.143*** (0.027)	1.011 (0.086)	0.999 (0.032)
Oldest child: 0–5 years (ref. = none <18)	0.637*** (0.009)	0.821*** (0.037)	0.543*** (0.012)	0.879* (0.058)	0.757*** (0.018)
Oldest child: 6–12 years	0.932*** (0.012)	0.995 (0.041)	0.972 (0.017)	0.931 (0.066)	0.911*** (0.023)
Oldest child: 13–17 years	1.135*** (0.018)	1.102* (0.053)	1.167*** (0.024)	1.013 (0.091)	1.155*** (0.037)
Veteran	1.349*** (0.022)	1.643*** (0.144)	1.462*** (0.070)	1.458*** (0.079)	1.461*** (0.029)
Employed part-time (ref. = full-time)	1.454*** (0.017)	1.415*** (0.057)	1.335*** (0.021)	1.600*** (0.099)	1.779*** (0.037)
Unemployed	1.348*** (0.036)	1.389*** (0.091)	1.309*** (0.051)	1.250* (0.126)	1.528*** (0.072)
Not in labor force	2.800*** (0.108)	2.604*** (0.329)	2.424*** (0.116)	1.862* (0.475)	5.290*** (0.396)

Table 5 (continued)

	Overall		Black Women		White Women		Black Men		White Men	
Public sector	1.565***	(0.020)	1.242***	(0.050)	1.562***	(0.027)	1.389***	(0.087)	1.652***	(0.037)
Missing sector	0.822**	(0.060)	0.862	(0.213)	0.769**	(0.067)	0.767	(0.459)	1.260	(0.183)
Union	0.952	(0.031)	0.939	(0.096)	1.086	(0.050)	0.735*	(0.107)	0.842**	(0.046)
Missing union	1.005	(0.015)	0.994	(0.048)	1.067**	(0.022)	1.035	(0.076)	0.934**	(0.023)
N	1,857,905		116,063		848,908		85,475		807,459	

Notes: Data come from the pooled CPS October supplements, 1978–2013. Estimates are weighted. Results of logistic regression models presented as odds ratios. Sample restricted to adults aged 29–61 with nonmissing values for dependent and independent variables. The model also includes fixed effects for occupations, census geographical divisions, metro/nonmetro, and years. Constant not shown.

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

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