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Perceived Job Insecurity and Entry into Work-Related Education and Training among Adult Workers

Cheryl Elman

Department of Sociology, The University of Akron

and

Angela M. O'Rand

Department of Sociology, Duke University

Stratification research focuses on the relationship between educational background and the work career. However, few studies have examined the extended educational career beyond young adulthood and its relationship to workers' labor market experiences, especially their concerns about job loss. We attach the 1995 Adult Education Data File to Bureau of Labor Statistics data to examine the structural conditions under which adult workers (ages 35–61) perceive their jobs to be insecure. We then examine whether concerns about job loss motivate adult workers to participate in further education, after controlling for the already established effects of human capital, contemporaneous life course roles, minority status, and other labor market conditions. We find that the perceived job insecurity of both advantaged and disadvantaged categories of workers are affected by labor market factors, but in different ways. On the one hand, ethnic minorities, union members, workers without employee benefits, and workers in restructuring sectors are explicitly more concerned about job insecurity. On the other hand, workers in once-advantaged stratification categories demarcated by higher education, more job experience, gender (male), and seniority (age) do not perceive significantly less job insecurity than other workers and thus are no more protected from these concerns. Adult work-related educational participation reflects perceived insecurity and industrial restructuring more than prior human capital or competing life course roles.

The relationship between educational background and the work career is a core component of models of the stratification process. Most labor market research

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Address correspondence and reprint requests to Cheryl Elman, Department of Sociology, The University of Akron, Akron, OH 44325-1905. E-mail: Cheryl2@uakron.edu.

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assumes that early life course educational achievement sufficiently represents the formal educational process and its long-term role for work careers and employment security. However, the marked, steady increase in the incidence of formal education and skills training among persons ages 35 and over (NCES, 1997) suggests that the relationship between education and the work career is more temporally complex than standard labor market models assume.[1] Most midlife educational participation since the 1980s is work-related (Office of Technology Assessment, 1986; NCES, 2000). Therefore, adult education must be examined in the contexts of work conditions, labor market dynamics (Kerckhoff, 1996; NCES, 2000) and the economic restructuring that has taken place over the past several decades (Bills, 2000; Salzman, 1998).

Economic restructuring is transforming the use of technology in the workplace (Hodson, Hooks, and Rieble, 1992; Kelley, 1990) and promoting corporate reorganization (Salzman, 1998) and global competition in production (Bills, 1995). The restructuring process is reducing the length of career jobs, often propelling middle-aged and older workers into new, but lower quality labor markets prior to retirement (Couch, 1998; Doeringer, 1990; Gardner, 1995). It is reshaping work careers by reducing individuals' prospects for full-time, permanent jobs; their options to change jobs; and even their options to remain economically active (Bartel and Sicherman, 1993; Doeringer, 1990; Hayward and Grady, 1986; Hipple, 1997).[2] Until recently, middle-aged and older workers had lower rates of job mobility than young adults; however, this is no longer the case.[3] The traditional "lifetime" employment contract that once protected mature

[1] It is difficult to estimate the prevalence and incidence of adult education due to a lack of longitudinal monitoring of lifelong learning and to inconsistencies in definitions of education across surveys. With regard to prevalence in 1995, 15.1% of the men enrolled in institutions of higher education were over age 34; 21.4% of women in these institutions were over age 34 (NCES, 1995). There was a higher rate of undergraduate enrollment among those age 35+ in 1990 than in 1970; about one-third of the 1970 enrollees who completed college degrees did so after age 30 (Jacobs and Stoner-Eby, 1998, CPS data). If this pattern has held, substantial proportions of college graduates in the 1980s and 1990s completed their degrees after age 30. In another national study, two-thirds of 1993 college graduates who planned to enter graduate school and had not yet enrolled 5 years post-B.A., still expected to enroll in the future (McCormick, Nuñez, Shah, and Choy, 1999). The average age of Master's degree students is 32; a third are over age 35 (Syverson, 1999). Older adults are also significant consumers of vocational education and extended professional/technical courses (Bills, 2000; Elman and O'Rand, 1998).

[2] Following job loss, a large proportion of mature workers turn to lower skilled or part-time, temporary, or contract (contingent) work. The term "contingent employment" refers to part-time, temporary, seasonal, or contract work and home-based work; the best definition, used by the Bureau of Labor Statistics, is ". . .any job in which an individual does not have an explicit or implicit contract for long-term employment" (Polivka and Nardone, 1989). The critical element in contingency is the low level of job security and employers' lack of commitment to future employment (Polivka and Nardone, 1989).

[3] One widely used definition of job displacement is job loss after at least 3 years of employment due to a plant or company relocating or closing, the elimination of positions or shifts, or insufficient work to sustain current employees (Hipple, 1997). In one calculation, about 2.8 million workers lost

workers from job loss prior to restructuring is eroding (Freeman, 1993; Kalleberg, 1996; Wallace, Leicht, and Raffalovich, 1999; DiPrete, 1993; Salzman, 1998). Paradoxically, mature workers in restructuring economies are penalized for lengthy job tenures and once-advantageous organizational memberships: Displaced workers with higher tenure, including union members, now have longer spells of joblessness than others (Fallick, 1996; Swain and Podgursky, 1991).

Education and technical knowledge play key roles in recent economic and corporate restructuring (Zemsky, 1998). Cutting-edge skills and credentials are increasingly valuable resources for keeping a job or finding a new one (Salzman, 1998). Proportionately greater economic returns accrue to knowledgeable workers (Lazerson, 1998; Murphy and Welch, 1993)—especially computer-literate workers (Autor, Katz, and Krueger, 1997). Although mature workers have few economic strategies available to respond to the restructuring process, they can pursue skills training or formal education to increase job security or to prepare for future job changes. Yet barriers to midlife reentry exist. Costs are substantial, whether measured as time, money, or lost alternative opportunities (Lazerson, 1998; Zemsky, 1998). Also, midlife educational participation is *nonnormative life course behavior,* i.e., it deviates from the tripartite life course model with the three sequential phases of education, work (and family), and retirement (and leisure) (O'Rand and Henretta, 1999). Family and work roles impede adults' educational participation (NCES, 1998).

Nevertheless, adult demand for education grows (NCES, 2000). Strong forces related to employment and job insecurity appear to be pushing adults beyond these normative barriers into educational participation. Even though most adult education is work-related, we do not yet know which labor market factors *specifically* motivate adults to further their educational careers. The adult education literature proposes that prior educational attainment best predicts adult entry (Bills, 2000 for overview), but most of these studies do not model factors related to work or the labor market (NCES, 2000). This article examines work and work-related educational participation at midlife, accounting for both human capital (e.g., initial education and job experience) and labor market vulnerability. More specifically, we examine whether middle-aged workers in labor market sectors undergoing restructuring express concerns about job security that in turn motivate adult education. Since no single data source contains detailed informa-

jobs that they had occupied for at least 3 years between 1991 and 1992 for an overall displacement rate of 3.9%; about 2.4 million workers were displaced between 1993 and 1994 for an overall rate of 3.4% (Hipple, 1997). The BLS data using a similar definition show 4.2 million workers displaced from January 1993 to December 1995 and a total of 3.6 million workers displaced between January 1995 and December 1997. The numbers displaced more than double when workers with less than 3 years of job tenure are included; using this definition, about 1 in 12 workers was displaced between January 1993 and December 1995 (Bureau of Labor Statistics, 1998). Workers ages 55 to 64 have had the highest rates of job displacement (Gardner, 1995) and, following displacement, have had the lowest rates of reemployment (Herz, 1991).

tion on work, family, educational careers, and labor market change (NCES, 2000 for a review of the available data), we link a national sample of middle-aged and older workers (ages 35–61) in the 1995 Adult Education Data File of the National Education Household Survey (NEHS) to Bureau of Labor Statistics indicators.

LABOR MARKET ADVANTAGE, PERCEIVED JOB INSECURITY, AND EDUCATIONAL STRATEGIES

Until recently, a "good initial education" and occupational achievement were market advantages that protected middle-aged workers from job insecurity and potential downward occupational mobility, and possibly precluded the need for adult reentry into formal education. This may no longer be the case. We propose that, above and beyond the human capital inherent in early educational attainment and job experience, labor market conditions fuel adults' concerns about job security and subsequent strategies of work-related educational participation.

As noted by Stolzenberg (1988), the probability of job loss or layoff is the inverse of job security. Predictors of job loss and job insecurity include low human capital investment (Becker, 1975; Tuma, 1976), labor market disadvantages such as incumbency in low-reward positions in labor market stratification (DiPrete, 1993; Tuma, 1976), membership in marginal status groups (Hachen, 1988, 1990), and jobs in relatively unstable labor market sectors (Doeringer, 1990; Ruhm, 1990). Robust predictors of adult educational entry include high human capital investment (Bills, 2000), membership in high status groups (Jacobs and Stoner-Eby, 1998), and noncompeting family and work roles (NCES, 2000). Accordingly, we include human capital, marginal status group, life course, labor market, and market restructuring variables, below, to develop hypotheses.

Human Capital Dis/Advantages

Traditional labor market models assume that individuals obtain general education early in the life course and that after initial schooling employers provide generalized or firm-specific skills in the form of on-the-job training or firm-sponsored training (Arrow, 1973; Becker, 1975; Sakamoto and Powers, 1995). Recent developments challenge these models. First, growth in adult educational participation has been steady over the last several decades (NCES, 1997, 2000); it grew from 32 to 40% from 1991 to 1995 alone (Kim et al., 1995).

Second, not all workers are exposed to on-the-job training; such training usually excludes low-skilled, minority, and older workers (Brown, 1990; Constantine and Neumark, 1996; Osterman, 1995). Third, on-the-job-training is only provided by a selective subset of employers (Knoke and Kalleberg, 1995) and strong evidence exists that corporate restructuring is reducing the desire and ability of these firms to continue to train workers (Bishop, 1998; Zemsky, 1998). Fourth, a potential conflict of interest exists in the provision of on-the-job training: employees benefit to the extent that they learn transferable skills,

whereas employers risk less when they provide firm-specific, nongeneralizable training (Hodson et al., 1992). On-the-job-training may not help the marketability of middle-aged workers, who tend to change industrial and occupational sectors in reemployment (Ruhm, 1990). In a context of shifting technical skill requirements, these patterns suggest that older workers' initial levels of education and job experience may matter relatively little (or matter less than in earlier times) to employability. Education and experience may not provide a blanket of protection. Therefore, we hypothesize the following.

H1: Perceived job insecurity is shaped more by current labor market conditions than by past human capital advantages.

These patterns also pose problems for theories that assume that education completed at the start of careers and subsequent employer-provided training are adequate to form the basis of lifetime (upward) mobility in labor markets. Evidence of increases in formal midlife education and training challenges this assumption and raises several questions. How are episodes of resource building via education related? Most studies on adult education conclude that adult participation reflects prior educational attainment (Bills, 2000, for review). These findings have led to the presumption that education across the life course is a singular process of human capital accumulation. However, an alternative proposal is plausible when considering two issues: First, the recent shift toward greater midlife educational participation raises questions about change in the education–work career relationship. Second, most studies that subscribe to the single-process presumption do not account for the impact of contemporaneous labor market conditions and life course contingencies on the decisions to return to school. Hence, an alternative argument is that early and late educational participation are loosely coupled but discrete processes of resource acquisition. We propose that adult work-related education is linked to current labor market conditions more than to prior job experience or educational background. As such, this prediction implies a less direct and more complex relationship between earlier and later human capital acquisition than is usually claimed:

H2: Adult educational participation is shaped more by current labor market conditions than by past human capital advantages.

Traditional Labor Market Protections from Job Loss

The long-term employment relationships (long job tenures) that emerged in the middle of the 20th century involved mutually structured commitments of workers to jobs and of employers to workers. These relationships have taken implicit and explicit forms. Although these relationships are disappearing, they have benefitted workers by ensuring job security (Kalleberg, 1996; Wallace, Leicht, and Raffalovich, 1997; Salzman, 1998). Implicit arrangements differentiate advantaged from less favored, generally low-skilled workers, who are less likely to be

protected by this contract. Implicit arrangements involve higher wage and benefit levels, on-the-job training, promotion opportunities, and other incentives that employers use to retain favored workers. A long-standing outcome of these arrangements is a pattern of job mobility that is highest earlier in the work career. With age and time, individuals tend to remain with the same employer (see Krecker, 1994, and Tuma, 1976, on age vs tenure effects). Workers with implicit contracts also have greater access to employers' organizational resources and to internal structures of upward mobility that may reduce their need to pursue outside training (Brown, 1990; Knoke and Kalleberg, 1994). We therefore expect the following:

H3: Workers with implicit long-term contracts are less likely to perceive job insecurity.
H4: Workers with implicit long-term contracts are less likely to pursue adult education.

Explicit contracts such as union agreements directly represent workers' interests in protecting and improving the conditions of their employment in contrast to implicit arrangements that reflect employers' interests in retaining workers not bound by such formal arrangements. Union members are different from other workers in that they bargain collectively and routinely with employers, have more organizational power than more isolated employees, and intend to stay at their jobs when contracts are in force (Cornfield, 1985). However, long-term restructuring has led to declines in the share of the nation's workforce that belongs to unions (Freeman, 1993) and to high rates of dislocation, unemployment, and downward mobility for union members exposed to plant closings and similar reorganization strategies (Fallick, 1996; Swain and Podgursky, 1991). Union members are more informed than dispersed labor forces about the ramifications of the economic changes that are occurring and so, in the climate of the 1990s after 3 decades of objective insecurity, we expect the following:

H5: Union members are more likely to profess concern about their own job insecurity.

Union members, like workers with implicit contracts, have access to employers' organizational resources and should have reduced need for outside training. However, their knowledge about economic trends, concern about abrogation of long-term contracts, and need to change sectors of employment if job loss occurs may outweigh these advantages. Thus, we propose the following:

H6: Union members are more likely to pursue educational activities.

Status Dis/Advantage

Ascriptive marginal group status attenuates the effects of human capital on employability, promotions, rewards, and job training. Thus, despite narrowing gender and some racial education gaps, women and ethnic minorities over the past half-century remained differentially allocated to disadvantaged labor market

segments with lower benefits, wages, and control over work (DiPrete and Soule, 1988; Wilson, Sakura-Lemessy, and West, 1999) and received lower returns to education (Brown et al., 1980; DiPrete and Soule, 1988; Hachen, 1988; Jacobs, 1989; Sørensen and Fuerst, 1978). Women and African Americans are more likely to be employed (a) in occupations that have higher shares of contingent workers and (b) as contingent workers themselves across occupations. Women are as likely to be displaced from their jobs as men (Gardner, 1995) and are out of work longer than men when displaced, even following higher than average tenure in previous employment. Similarly, displaced African Americans and Hispanics have lower reemployment rates than Whites (Gardner, 1995). Older workers (55 and over) have high rates of exit from employment in occupational sectors where job opportunities are growing (Elesh, 1995) as well as shrinking (Ruhm, 1990) and often cannot replace lost jobs (Hipple, 1997). Finally, for most of the 20th century, exclusion from privileged management positions or union or professional associations on the basis of race, ethnicity, and gender has marginalized these groups and reinforced a sense of insecurity. Status group ascription contributes to persistent and durable inequalities in the workplace and elsewhere (see Tilly, 1998). These experiences result in higher reported levels of job insecurity for persons in these subgroups (Polivka, 1996b). Therefore, we propose the following:

H7: Workers in marginal status groups have greater expectations of job loss.

Ascribed group status may be less important a factor in midlife education and training patterns, but there are few studies in this area. Women (but not ethnic minorities or older workers) appear to have parity in access to on-the-job-training (Brown, 1990). And women and African Americans appear to be equally as likely as other subgroups to pursue nonemployer sponsored vocational training (Elman and O'Rand, 1998). Rational choice theory would suggest that disadvantaged status group members should benefit more from marginal increases in human capital. Yet, they may not be as likely as others to retrain due to structured disadvantage in their labor market positions and low expectations of reward for this behavior. We hypothesize the following:

H8: Workers in marginal status groups are less likely to participate in adult education.

Life Course Constraints

The human capital and status attainment models often ignore barriers to upward mobility (via retraining) presented by structured life course roles such as parenting and caregiving for older persons (but see Hachen, 1990; Petersen and Spilerman, 1990). Yet middle-aged and older workers across adult ages are normally confronted with role demands that compete with work and educational participation. Life course roles related to the household division of labor and the

allocation of time to caregiving act as constraints on employability (Petersen and Spilerman, 1990). While life course roles related to care giving should not *directly* influence the perceived likelihood of layoffs and job loss, such roles are likely to impede educational reentry (Elman and O'Rand, 1998).

H9: Family and caregiving roles decrease the likelihood of educational participation.

Vulnerability to Restructuring

Economic restructuring constitutes a long-term phenomenon (Bills, 1995; Goodman, 1994; Hipple, 1997), which has triggered widespread corporate reorganization and perhaps educational institution expansion (Lazerson, 1998; Zemsky, 1998).[4] The key forces underlying economic restructuring include greater service industry growth relative to growth in other sectors (Bills, 1995; Elesh, 1995; Rosenthal, 1995), a rising premium for specialized skills related to technology shifts (Autor, Katz, and Krueger, 1997; Hodson et al., 1992; Kelley, 1990; Murphy and Welch, 1993), and global marketization (Bills 1995). These forces sustain employers' perceptions of the need for market efficiency, which justifies workforce trimming. Long-term work contracts are perceived to be costly, so their numbers are reduced (Belous, 1990).

In this climate, even full-time and long-term employees express insecurity related to retaining current jobs and acquiring new ones (Polivka and Nardone, 1989). Doeringer (1990) notes that although mature workers may not "see" the market forces that may be behind labor market changes, they do perceive the relative security of their own current employment. Do their concerns about job security reflect the restructuring of their own occupations and industries? The macroeconomic forces we examine in this article include work in sectors marked by job displacement linked to declining industries and depressed geographic areas (Fallick, 1996) and work in contingent employment across occupational sectors. We expect the following:

H10: Workers in industrial sectors with high displacement rates and in occupational sectors with high contingent employment rates are more likely to perceive job insecurity.

Are middle-aged workers in unstable market sectors more likely to retrain? Much education and labor policy assumes this, but workers' labor market locations may provide differing incentives/disincentives for education and retraining. Labor markets with limited workplace opportunities reduce the aspiration to pursue "resource building" through further education (Althauser and Kalleberg, 1981). Since jobs in these markets are not embedded in occupational

[4] Economic restructuring, via the mechanisms of corporate restructuring and reduced manufacturing jobs, decreases employer demand for non-college-trained personnel to fill higher wage jobs. This triggers educational feedbacks that propel higher numbers of students into postsecondary education (Lazerson, 1998) and stimulate educational institution growth (Zemsky, 1998).

or firm career ladders they provide little chance of upward mobility, even if retraining occurs (Callaghan and Hartmann, 1991). Given these expectations, our final hypotheses are as follows:

H11: Workers in occupational sectors with more contingent employment and in industrial sectors with high displacement rates are less likely to participate in adult education.
H12: Workers who perceive job insecurity are more likely to pursue educational activities.

DATA, VARIABLES, AND METHODS

Data

The National Household Education Survey (NHES) is sponsored by the National Center for Educational Statistics (NCES). The NCES periodically collects information on educational levels and trends for children and adults. We use the 1995 Adult Education Data File, which assessed adult participation in a range of educational activities. The NHES sampling procedure involved the random sampling of telephone numbers within phone banks by list-assisted sampling; the NCES reports that bias resulting from the exclusion of number banks is small (National Center for Educational Statistics, 1996). There may be coverage bias of ethnic or lower socioeconomic status groups who lack phones, but number banks in areas with a large proportion of African American and Hispanic households were sampled at higher rates to provide reliable estimates for these subgroups. The NHES favored the selection for interview, within households, of current educational participants, and, among participants, of adults with low education; they interviewed up to two such adults per household, if available. Although the sample is of telephone households, the data set includes a weight derived from the 1994 Current Population Survey; when this weight is used, the data are representative of the total number of persons living in telephone and nontelephone households. The survey is therefore representative of the U.S. adult working population. Below, we discuss a method for correcting statistical estimates, given the nonindependence of case selection.

Computer-assisted telephone interviews (CATI) were conducted with the number of completed interviews of adults of all ages being 19,722. Our sample is of all adults ages 35–61 ($n = 9{,}684$).[5] This group is young enough to allow comparisons of perceived job insecurity and retraining across several cohorts, yet mature enough to be considered of prime working age. Age 35 is an important cutoff point in the experience of job security: persons in contingent jobs are much more likely to be under age 24, are as likely to be ages 25–34, and are much less

[5] We constrain our sample only on the basis of respondents' ages. There are few missing values for variables (e.g., demographic and socioeconomic characteristics) in these data, as released by NCES; missing values would impede the calculation of replicate weights for generating accurate sample weights. The methods by which NCES imputed values are discussed fully in National Center for Educational Statistics (1996, p. 22).

likely to be 35 and over than persons in noncontingent jobs (Polivka, 1996b, Table 1).

Dependent Variables

We are limited by cross-sectional data and cannot model job loss *per se*. Instead, we examine a related phenomenon: the subjective expectation of future job loss and the motivation to return to school in light of perceived job insecurity. Future research should examine whether expectations of job loss effectively foretell job loss. Social scientists working on other phenomena linking subjective assessments with objective outcomes have found significant, positive associations between the two.[6]

The survey respondents were asked the following question: "Thinking about the next twelve months, how likely do you think that it is that you will lose your job or be laid off? Would you say. . .Very likely, fairly likely, not too likely, or not at all likely?" We use this question as the first dependent variable, coded as a dichotomous variable (LAYOFF) with those believing that it was very or fairly likely equal to 1 and those believing that it was not too likely or not at all likely equal to zero. This operationalization is similar but not identical to one in a recent study done by the Bureau of Labor Statistics.[7]

We focus on *work-related* education measured as participation in one or more of the following activities: precredentialing basic skills classes (to improve reading/writing skills or any high school equivalency training), college or university programs leading to a degree, vocational programs leading toward a diploma or certificate, or an apprenticeship program leading to journeyman status in a skilled craft or trade. We define adult education (SCHOOLING) (second dependent variable) as dichotomous and exclude courses in English as a second language, courses that are career or job-related but taken for only one semester or less, and other structured courses—the majority of which were taken (according to respondents' reports) for family, personal, or social reasons. We use published Bureau of Labor Statistics industrial displacement rates for years 1993–1994 (Hipple, 1997) and occupational contingent employment rates for February 1995 (Polivka, 1996b).

[6] For example, research in medical sociology finds that self-perceptions of health status are highly correlated with objective measures of health. Also, self-perceptions of life expectancy are correlated with mortality (Mirowsky, 1999).

[7] They use three indicators of contingency: whether a job was temporary, whether a worker could continue on the job if desired, and how long a worker had held a job. Their narrowest estimate of contingency includes persons employed for 1 year or less who expect their job to last less than a year. Their broadest estimate removes the 1-year duration limit for job tenure and for expected employment. In essence, the latter estimate "effectively includes all wage and salary workers who do not expect their jobs to last" (Polivka, 1996a, p. 6). Our operationalization is most similar to the latter of the BLS estimates of contingency. The number of workers in our sample with a job tenure of less than 1 year is 448. Unlike the BLS data, however, the NEHS does not provide reasons *why* respondents expect to work less than 1 year.

Independent Variables

We conceptualize two dimensions of human capital resources: initial education and job experience. Initial education is measured as *completed education,* which has been the traditional measure of resources used in mobility research. Job experience is captured as *job tenure,* which is the length of time the respondent has been employed by his or her current employer. Other market advantages include the job benefits provided by employers. We operationalize two types of benefits. One type serves an insurance function in that it supports the income and the functioning of workers or assists them during periods in which they are unable to work. This variable is equal to "1" if the worker has three or more of the following *benefits*: pension, vacation with pay, sick leave with pay, and/or medical insurance. The second type of benefit is employers' direct investment in skill building, or the *facilitation of job training*. This dummy variable is coded as "1" if the respondent's employer gave time off for classes, with or without pay; provided classroom space for classes; paid all or part of costs of educational participation; or in any other way encouraged or facilitated their training. *Union membership* is an indicator of positional labor market advantage and also of the commitment of workers to jobs, an aspect of long-term contracts (Cornfield, 1985). We also examine the respondent's reported *earnings* (*logged*) and whether persons are in career lines marked by recent labor market mobility (heterogeneity in the propensity for mobility) by indicating whether respondents have had *more than one employer* in the past year. Finally, some respondents need to take classes to maintain occupational licensure or professional status and we control for this (*ongoing education certification*).

Status group categories include *age, race/ethnicity*, and *gender*. Life course constraints are defined as *marital* and *family roles*. Marital statuses include being never married (the reference category), married, separated/divorced, and widowed. We account for the potential need to provide assistance and care for children (the presence of children under age 10 in the household) and the elderly (the presence of elders age 75 and over in the household). We also investigate the direct effects of labor market restructuring (employment in unstable market sectors) by attaching published occupational contingent employment rates and industrial displacement rates to the Adult Education Survey. (The Adult Education Survey, unfortunately, provides a two-digit, not a three-digit, differentiation of the occupations and industries of respondents.[8]) Control variables include region of the county and city size.

[8] The two-digit codes in the data do not allow us to differentiate occupations in as refined a manner as we would like. Three digit codes would have allowed use of the DOT to ascertain job skills of respondents. It would be better to examine contingent employment rates at the detailed occupational level.

Methods

Because both dependent variables are qualitative and dichotomous we use logistic regression models to estimate the equations. As the conceptual model indicates, information about individuals' labor market stratification is integral to the model. Unfortunately, unemployed and economically inactive respondents have missing data for the job insecurity and labor market variables, hence information about them will be systematically excluded from the equations. This type of exclusion may lead to biased estimates (Berk, 1983; Winship and Mare, 1992). The system of equations are modeled as follows:

$$y_1^* = \beta_k x_k + u_1, \tag{1}$$

where y_1^* is the latent propensity of respondents to feel impending job loss, β_k are coefficients to be estimated, x_k are factors that influence job insecurity, and u_1 is binomial error in logistic distribution;
and

$$y_2^* = \beta_k x_k + \beta_k Y_1 + u_2, \tag{2}$$

Where y_2^* is the latent propensity of respondents to pursue education, β_k are coefficients to be estimated, Y_1 is observed job insecurity, x_k are factors that influence educational activities, and u_2 is binomial error, in logistic distribution, uncorrelated with u_1.
However

$$y_3^* = \beta_k x_k + u_3, \tag{3}$$

where y_3^* is the latent propensity of respondents to be active, β_k are coefficients to be estimated, x_k are factors that influence labor force participation, u_3 is binomial error in logistic distribution;
and

$$y_1 = y_1^* \text{ if } y_3^* > 0; \;\; y_2 = y_2^* \text{ if } y_3^* > 0$$

$$y_1 = 0 \text{ if } y_3^* \leq 0; \;\; y_2 = 0 \text{ if } y_3^* \leq 0,$$

where $y_{1,2}$ are the observed variables, perceived job insecurity, educational participation, respectively.

Therefore, Eq. (3) is used to model the selection process (ACTIVITY) which determines which respondents will contribute information to the LAYOFF and SCHOOLING equations. The selection equation predicts labor market activity as a function of respondents' age; age squared; race; sex; marital status; being a U.S. citizen; history of AFDC use; schooling; measures of household structure, such as having children in the household; and household income, as opposed to individual income.[9] The functional form (age and age-squared) and other vari-

[9] We consider persons working or currently looking for work to be economically active. The

ables identify this equation (available on request). The models in Tables 4 and 5 report the hazard parameters.

Equations 1 and 2 can be treated as two single logistic models under the assumption that the equation error terms are not correlated. The penalty for treating the equations as single equations in the presence of correlated disturbance is one of obtaining biased standard errors (Greene, 1997) although model specification issues arise. However, as noted above, the NHES sample design involved multiple procedures, such as oversampling, unequal probability sampling, and cluster sampling, which violate an assumption of simple random sampling. While standard statistical packages, such as SAS or LIMDEP, produce unbiased coefficients with the use of the Sample Weight variable, they will produce biased standard errors since these packages assume that the data have been obtained by a process of simple random sampling.

Therefore, standard statistical packages—which have the capability of solving systems of logistic equations—do not have the ability to handle the complex sampling structure. WesVarPC—which can analyze data obtained by complex sampling methods and produce efficient standard errors—cannot solve systems of logistic equations. Under the circumstances, we assume that rho, or the correlation of the disturbance terms of the two equations, is not significant and that the model specification, as in Eqs. (1)–(3), is correct (as found by Goux and Maurin, 1997). We run Eq. (3) above, unweighted in SAS. In a two-stage procedure, we import the predicted variable, Activity, as an independent variable (hazard parameter) into WesVarPC to predict Perceived Layoff and Schooling. WesVarPC (Brick et al., 1995) uses a jackknife replication method to calculate efficient estimates of the standard errors. We use WesVarPC to conduct all of the statistical tests reported in all tables.

RESULTS

The Prevalence and Correlates of Perceived Job Insecurity and Educational Participation

Table 1 provides the weighted mean estimates and standard errors of the estimates of all of the variables.[10] Overall, about 14% of the sample feel that they are Likely or Very Likely to be laid off or to lose their jobs in the next 12 months and about 9% are involved in work-related educational activities. The mean age of the sample is 46, about 56% have some post-high-school learning, and about 75% have 3 or more years of experience with their current employer (the mean number of years of job tenure is 9.9).

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number of inactive persons in the sample is 1,587. Persons who were unemployed but looking for work were not asked about perceived job insecurity. To keep them in the analyses, we code them as having a high level of job insecurity: they have no secured jobs. Also, about 454 cases were lost due to an "undetermined" designation for industry in the Adult Education Survey.

[10] Standard errors for variable means are generated due to the inherent sampling variation involved in the jackknife sampling procedures in WesVar-PC.

TABLE 1
Weighted[a] Means and Standard Errors of Model Variables

Variable	Weighted Mean	Weighted SE
Dependent variables		
Economic Activity	0.78	0.005
Perceived Layoff (two-category)	0.14	0.005
In Educational Activities 1995	0.09	0.003
Dis/Advantage in Human Capital		
Under 12th Grade (Reference)	0.16	0.006
High School graduate	0.28	0.006
Some College or Vocational	0.26	0.005
Bachelor's Degree	0.16	0.004
Post-College Education	0.14	0.004
Job Tenure (years)	9.88	0.122
Job tenure of $\geq$3 years	0.74	0.006
log (Earnings)	10.20	0.01
Structured Labor Market Dis/Advantage		
Union Member	0.19	0.007
Three or More Benefits	0.47	0.007
Employer Support of Education	0.25	0.005
Professional/Managerial	0.20	0.006
Technical	0.13	0.005
Service	0.41	0.006
Laborer	0.26	0.007
Multiple Employers Past Year	0.19	0.005
Need certification	0.03	0.005
Marginalized Status Groups		
Age	45.90	0.091
Female (Male-Reference Category)	0.51	0.005
White (Reference)	0.78	0.004
Black	0.10	0.003
Hispanic	0.07	0.002
Other race	0.04	0.003
Life Course Constraints		
Never Married (Reference)	0.08	0.004
Married	0.73	0.007
Separated/Divorced	0.16	0.005
Widow	0.03	0.003
Kid under age 10	0.29	0.005
Elder $>$75 in Household	0.02	0.002

[a] Data in Tables 1–5 are weighted with sample and replicate weights as calculated in WesVarPC.

Bivariate relationships reported in Table 2 suggest that human capital advantages protect against perceived job insecurity. Persons with less education or nonprofessional skills are more likely to perceive insecurity. In contrast, persons with college degrees or more skilled workers (managers and technical personnel as derived from two-digit occupational codes) have the lowest levels of perceived job insecurity. Labor market rewards and contracts also shape perceived job

TABLE 2
Percentage of U.S. Workers Who Feel That They Are "Likely" or "Very Likely" to Be Laid Off in the Next 12 Months, 1995

Variable	Percentage
Overall	14.0
Dis/Advantage in Human Capital	
<12th grade (vs Others)	24.6***
HS Grad (vs Others)	14.3
Some college (vs Others)	14.9
College grad (vs Others)	10.4***
Post-college (vs Others)	7.6***
Job Tenure <3 years	21.8***
Job Tenure ≥3 years	10.2***
Structured Labor Market Dis/Advantage	
Multiple Employers Past Year	19.5***
Union Member (vs Others)	14.9
Prof/Manager (vs Others)	6.5***
Technical (vs Others)	10.2*
Service (vs Others)	12.9
Laborer (vs Others)	16.4***
No Medical Benefits	12.3**
Medical Benefits	8.9**
No Pension Benefits	11.6**
Pension Benefits	8.7**
Employer Supported Education (vs Others)	10.3***
Earnings	$27,882*** (vs $34,632[a])
Marginalized Status Groups	
Age 35–43 (vs Others)	14.7
Age 44–51 (vs Others)	13.1
Age 52–51 (vs Others)	13.6
Male	12.7*
Female	15.5*
White (vs Others)	10.9***
Black (vs Others)	28.5***
Latino (vs Others)	27.0***
Other Race (vs Others)	18.6

* $p < .05$.
** $p < .01$.
*** $p < .001$.
[a] Not too likely or not at all likely to be laid off.

insecurity: workers with higher earnings are less concerned about impending job loss, whereas workers without medical insurance or pensions have greater concern. Union members perceive somewhat higher levels of job insecurity (although not significantly so) as do workers whose employers invest in education and workers who had multiple employers in the previous year.

As expected, marginal status group membership increases perceived job insecurity. Research shows that White workers have lower displacement rates than

African American or Hispanic workers and that women have similar job displacement rates to men (Gardner, 1995). Findings in Table 2 are consistent with this: More than one in four African American and Hispanic adults feel that their jobs may end in the next year. Women are slightly more likely than men to feel that their jobs are insecure, but the difference is not significant. Older persons are as likely as younger persons to expect job loss in the next year; these concerns reflect the current, higher rather than the traditional, lower rates of job mobility of older persons in the past.

Does perceived insecurity reflect objective markers of job insecurity? The answer is yes in these data; similar human capital, status group, and labor market structure variables differentiate those with relatively high objective risks of job security and those who perceive insecurity.

About 9% of the sample participated in educational activities at the time of the interview (Table 3). As these data are cross-sectional, they underestimate the proportion of adults who will ever participate over the adult life course. A marked lack of education earlier in the life course does appear to be a critical disadvantage with regard to educational participation at midlife. Those without a college background are also significantly less likely to participate at midlife. Persons most likely to participate are midway between educational mileposts: they have some college but not college degrees. In addition, persons with technical skills, as opposed to professional or managerial skills, are more likely to participate in educational activities. It may be that technically skilled workers, with little control over the work process, are the most motivated to retrain (Elman and O'Rand, 1998). Findings are mixed, however, with regard to other forms of human capital; experienced workers are less likely, highly educated and skilled workers are more likely to participate. Findings are also mixed for factors representing labor market rewards and contracts. Employer support of education is associated with a higher likelihood of educational participation, but union membership and insurance benefits do not significantly differentiate participants. Persons with higher wages are less likely to participate in educational activities.

Persons responsible for the support of themselves and families, those with younger children, are also more likely to retrain, but age may play a role here as well: Persons with children tend to be younger. Nonwhites, shown in many studies to have higher rates of job loss at midlife and longer unemployment durations (Gardner, 1995), are more likely to participate in educational activities. Also, women, at equal risk of displacement but at higher risk of being in contingent jobs, are more likely to participate. However, the likelihood of participation decreases monotonically with age. Although older workers (52+) anticipate job loss as much as other workers, they are less likely to retrain.

Bivariate relationships cannot provide the full story, yet it appears that educational participation may be a strategy pursued proactively by adults who expect a labor market exit/entry. Workers at risk of job loss in labor markets—minorities, women, and persons with multiple work spells or less job experience—are more likely to participate, without controlling for other factors. But

TABLE 3
Percentage of Adults in Educational Activities, 1995

Variable	Percentage
Overall	9.0
Perceived Layoff Likelihood	13.1***
Dis/Advantage in Human Capital	
<12th Grade (vs Others)	5.6***
HS Grad (vs Others)	5.6***
Some College (vs Others)	13.6***
College Grad (vs Others)	9.2
Post-College (vs Others)	11.3**
Job Tenure <3 years	12.0***
Job Tenure ≥3 years	8.6***
Structured Labor Market Dis/Advantage	
Multiple Employers Past Year	13.3***
Union Member	11.5
Professional/Managerial	9.0
Technical	15.5***
Service	9.8
Laborer	7.2***
No Medical	9.0
Medical Benefits	9.8
No Pension	8.8
Pension Benefits	10.1
Employer Supported Education	19.1***
Earnings	$31,251*** (vs $33,888[a])
Life Course Constraints	
Single (vs Others)	10.5
Married (vs Others)	8.5**
Sep/Divorced (vs Others)	11.6***
Widowed (vs Others)	4.0***
Children <10 in Home	10.3**
Elder (>Age 75) in Home	9.6
Marginalized Status Groups	
Age 35–43 (vs Others)	12.5***
Age 44–51 (vs Others)	8.9
Age 52–61 (vs Others)	3.4***
Male	8.1**
Female	10.0**
White (vs Others)	8.4***
Black (vs Others)	12.6***
Hispanic (vs Others)	8.6
Other Race (vs Others)	11.8*

* $p < .05$.
** $p < .01$.
*** $p < .001$.
[a] Non-participant in education.

other workers who might benefit do not participate, including those in the laboring occupations, those with less initial education, and the oldest workers.

Sources of Perceived Job Insecurity and Educational Participation

Multivariate, nested models predicting perceived job insecurity and educational participation are reported in Tables 4 and 5. The coefficients are interpreted as log odds; a unit change in a predictor increases or decreases the log odds of an outcome by the value of the coefficient. Exponentiated coefficients are also reported; their difference from 1 (times 100) indicates the percentage change in the odds of an outcome for an influence, net of other variables. A discussion of the results is in the next section.

Hypotheses 1, 3, 5, 7, and 10 address perceived job insecurity (Table 4). In the first model, we find that persons with bachelor's degrees and with postcollege education have lower expectations of job loss than persons without high school diplomas. Also, the odds of perceived job insecurity declines with each year of work experience. However, education and work experience become insignificant in the second model with the addition of the labor market structure variables, consistent with Hypothesis 1. Early educational achievement and job experience (job tenure) do not protect against perceived job insecurity in the full model.

The provision of employee benefits—an indicator of a long-term employment contract—is associated with a 67% lower level of job insecurity in Model 2 (Hypothesis 3). Also as expected (Hypothesis 5), union members are 58% more likely than nonmembers to report that they expect to lose their jobs in the next year.

There is mixed support for Hypothesis 7 that women, older workers and ethnic minorities have greater expectations of job loss.[11] Of the status group variables, only ethnicity is positively associated with perceived insecurity for middle-aged and older adults. In Model 2 in Table 4, African Americans have about a 170%, Hispanic persons about a 73%, and persons of other races about a 75% higher odds of expecting a job loss than do Whites (reference category). Age (ages 52–61 are the reference category) and gender do not significantly affect the perceived likelihood of layoff when other factors are controlled.

Other, less proximate forces are associated with economic restructuring and include contingent employment rates by occupation and as job displacement rates by industry. Each source of vulnerability significantly increases perceived job insecurity (Hypothesis 10). Perceived job insecurity increases by about 13 and 14% for each unit increase in occupational contingency and industrial displacement rates, respectively. The addition of the labor market variables significantly improves model fit. In sum, all but two hypotheses cannot be rejected in the

[11] Likelihood Ratio Tests show that Educational Participation models that include interactions of gender with race (African American and Latino), Perceived job insecurity, Benefits, Job tenure, Separation/divorce, and Displacement rates, do not have significantly better fit to the data. All tables not provided available by request.

TABLE 4
Second-Stage Logistic Regression: The Perceived Likelihood of Job Layoff in the Next Year

Parameter	Model 1			Model 2		
	Parameter Estimate	Standard Error	Odds Ratio	Parameter Estimate	Standard Error	Odds Ratio
Intercept	1.29	0.74	—	−0.87	1.05	—
Dis/Advantage in Human Capital						
H.S. Graduate	−0.25	0.17	0.78	−0.16	0.17	0.85
Some College	−0.17	0.17	0.84	0.09	0.17	1.09
BA Degree	−0.49*	0.22	0.61	−0.04	0.23	0.96
Post College (vs Non-HS Grad)	−0.80***	0.22	0.45	−0.44	0.24	0.64
Job Experience	−0.03***	0.01	0.97	−0.01	0.01	0.99
Structured Labor Market Dis/Advantage						
Union Membership		—		0.46**	0.15	1.58
Employee Benefits		—		−1.10***	0.15	0.33
Employer Support Of Education		—		−0.12	0.11	0.89
Log (Earnings)	−0.22**	0.07	0.80	−0.09	0.09	0.91
>1 Employer Past Year	0.58***	0.09	1.79	0.20*	0.10	1.22
Marginalized Status Groups						
Age 35–43	−0.02	0.17	0.98	−0.01	0.19	0.99
Age 44–51 (vs Ages 52–61)	0.06	0.17	1.06	0.10	0.20	1.10
Female	−0.13	0.12	0.88	−0.12	0.12	0.89
Black	0.96***	0.17	2.61	0.99***	0.16	2.69
Hispanic	0.57***	0.17	1.77	0.55**	0.19	1.73
Other Race	0.44*	0.22	1.55	0.56*	0.26	1.75
Restructuring Vulnerability						
Occupational Contingent Employment Rate		—		0.12**	0.04	1.13
Industrial Displacement Rate		—		0.13**	0.05	1.14
Hazard	−0.96	0.54		−0.80	0.60	
Pseudo R^2	0.075			0.105		
Model χ^2	378.5			473.7		
N	7823			7823		
df	19			24		

Note. Models in Tables 4 and 5 control for U. S. region and City Size.
* $p < .05$.
** $p < .01$.
*** $P < .001$.

Perceived Job Insecurity equation. The two without observable support are those that predict the advantageous effects of being male and the vulnerability of age. Ethnic minority status, union membership, employment in sectors undergoing

TABLE 5
Second-Stage Logistic Regression: Educational Participation

Parameter	Model 1			Model 2		
	Parameter Estimate	Standard Error	Odds Ratio	Parameter Estimate	Standard Error	Odds Ratio
Intercept	−3.45***	0.68	—	−2.61***	0.73	—
Job Insecurity	0.32**	0.11	1.38	0.34**	0.12	1.40
Dis/Advantage in Human Capital						
HS Graduate	−0.29	0.20	0.75	−0.36	0.20	0.70
Some College	0.55**	0.17	1.73	0.39*	0.18	1.48
BA Degree	0.11	0.21	1.12	−0.18	0.22	0.84
Post-College (vs Non-HS grad)	0.28	0.19	1.32	−0.09	0.20	0.91
Job Experience	−0.01	0.01	0.99	−0.02**	0.007	0.98
Structured Labor Market Dis/Advantage						
Union Member		—		0.28**	0.10	1.32
Employee Benefits		—		−0.12	0.11	0.89
Employer Support for Education		—		1.25***	0.11	3.49
Log (Earnings)	−0.12*	0.06	0.89	−0.17**	0.06	0.84
>1 Employer Past Year	0.31**	0.10	1.36	0.19	0.10	1.21
Need Certification	0.50***	0.09	1.65	0.23*	0.10	1.26
Marginalized Status Group						
Age 35–43	1.02***	0.19	2.77	1.11***	0.20	3.03
Age 44–51 (vs 52–61)	0.60**	0.19	1.82	0.76***	0.18	2.14
Female	0.42***	0.10	1.52	0.21	0.11	1.23
Black	0.38*	0.16	1.46	0.38*	0.15	1.46
Hispanic	−0.02	0.19	0.98	0.07	0.20	1.07
Other Race	0.44*	0.17	1.55	0.46*	0.18	1.58
Life Course Constraints						
Widow	−0.12	0.32	0.89	0.09	0.33	1.09
Never married	−0.27	0.15	0.76	−0.19	0.16	0.83
Sep/Divorced (vs married)	0.17	0.11	1.18	0.18	0.11	1.20
Kids <10 in Home	−0.10	0.09	0.90	−0.09	0.10	0.91
Elder >75 in Home	0.47	0.26	1.60	0.65**	0.24	1.91
Restructuring Vulnerability						
Occupational Contingent Employment Rate		—		0.00	0.03	1.00
Industrial Displacement rate		—		−0.12**	0.04	0.89
Hazard	1.25*	0.62		1.12	0.67	
Pseudo R^2	0.066			0.116		
Model χ^2	286.5			430.8		
N	7823			7823		
df	26			31		

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

labor market restructuring, and a lack of employment benefits increase perceived job insecurity. Education and work experience do not decrease it.

Table 5 presents the regression of educational participation on perceived job insecurity, human capital resources, the marginal status category, the life course variables, and the labor structure variables (Hypotheses 2, 4, 6, 8, 9, 11, and 12). As Hypothesis 2 suggests, the impact of initial education on adult education in Model 1 is minimal relative to labor market effects. But with the addition of labor market variables in Model 2, the importance of noncompletion of college and educational credentialing emerges (see Collins, 1979, and the discussion). Persons with only some college but without college degrees have 48% higher odds of adult participation than non-high-school graduates. Finishing college may be an important personal aspiration for adults (McCormick, Nuñez, Shah, and Choy, 1999) but the earnings gap between college and non-college graduates is large as well (Lazerson, 1998; Monks, 2000; Zemsky, 1998). Also, with the addition of the labor market variables, workers with longer job tenures are less likely to participate (with a decline of about 2% per year of tenure, in Model 2). This is does not support Hypothesis 2, that human capital has less effect on participation than labor market factors. Interestingly, job experience does not reduce concerns about job loss (Table 4) but it is negatively associated with work-related adult learning.

The addition of the labor market structure variables in Table 5 significantly improves model fit. Support for Hypothesis 4 is mixed: workers who are highly rewarded by employers, indicated by wages, are less likely to pursue educational activities. Insurance benefits do not encourage or discourage participation.[12] But workers who need certification or have employer support for educational benefits are more likely to participate; in these cases institutionalized supports of adult learning are in place. In support of Hypothesis 6, union members have 32% higher odds of participation than others.

The odds of educational participation monotonically decline with age, as expected. But African Americans and persons of other races, traditionally viewed as members of disadvantaged status groups, are not significantly less likely to participate than Whites in the reference group. Hypothesis 8, that status disadvantage reduces participation, only finds partial support.

Being separated or divorced neither discourages nor facilitates retraining (Hypothesis 9), against expectations. The effect of marital status on educational roles needs further study with longitudinal data. Individuals may use this type of life change as an opportunity to further career goals, or they may be forced to retrain due to a greater need for self-support. Interestingly, care giving for

[12] The Model 2 parameters retain the same signs, impacts, and general level of significance when Model 2 is run without the Perceived Insecurity variable, except for the coefficient of insurance benefits. When job insecurity is not present in the model, workers with benefits are significantly less likely to participate in adult education ($p < .45$). Thus perceptions of job insecurity influence advantaged workers (e.g., with benefits) to behave more like nonadvantaged workers and retrain.

children does not seem to discourage educational participation, whereas having an older person present in the household is associated with a 91% increase in educational participation.

Hypothesis 11 addresses whether workers respond directly to the restructuring that is occurring across occupational and industrial sectors. Although high occupational contingency rates do not appear to directly influence educational participation, workers in industrial sectors with high rates of displacement are less likely to be involved in education or retraining: Participation decreases by 11% for each unit increase in industrial displacement rates. This model also addresses the question whether, all else equal, mature workers with concern about job loss are more likely to retrain (Hypothesis 12). We find that persons who expect job loss are about 40% more likely to participate in education.

In sum, labor market factors (perceived insecurity, job displacement, union contracts, and some benefits) strongly influence participation, in the expected directions. There is some attenuation of general education effects amid a heightening of noncompletion of college effects in a full model. Against expectations, some ethnic minorities have higher likelihoods of participation, controlling for perceived insecurity. Life course roles have little effect. The hazard parameters are not significant in both models in Table 4 or in the full model in Table 5. Factors which "select" people into paths of economic activity do not directly influence perceived job security or adult education when labor market factors are modeled.

DISCUSSION

The emerging relationship between education and work at midlife has the potential to alter traditional models of human capital, work, and the life course. Although this study has measurement and modeling limitations, as addressed above, several major findings emerge from the analysis. One finding is that a "good" early general education and work experience do not act to reduce perceived job insecurity for current cohorts of mature workers in today's labor markets. In addition, race and ethnic background is strongly associated with perceived job insecurity at midlife. The latter finding is not surprising. What is surprising is that men and older workers, once favored with job security, no longer seem to be protected against job loss concerns. Thus, incumbency in traditionally advantageous stratification categories—demarcated by human capital, age, union membership, gender, and ethnicity—has minimal or even positive effects on perceived job insecurity in today's economy.

The only strong, protective effect against perceived job insecurity is the presence of employee benefits. The most important benefit is insurance protection, which buffers workers against market forces when they are sick or take restorative time off from work. The other type of benefit, employer support for job training, does not influence perceived job insecurity. The absence of this

effect supports speculations that employers' direct investments in job skills are oriented toward (firm-) job-specific rather than transferable skills (Hodson et al., 1992). Job changes for older workers are generally associated with skill demand changes. Therefore, employer-supported education is not very salient to mature workers in the context of their concern over job loss and job replacement. Interestingly, high wages do not reduce perceived job insecurity, at least for this middle-aged sample. Perhaps findings in a younger sample would be different. We conclude that labor market locations have the greatest influence on perceived insecurity. Concerns about job loss are buffered by job benefits, which are indicators of more enduring work contracts and job security.

Adult work-related educational participation is conditioned on labor market locations and experiences, including industrial restructuring and perceived insecurity. Although human capital variables are good predictors of adult participation in schooling when bivariate relationships are examined, they lose much of their significance in the multivariate models that include marginal status, family, and labor market indicators. This is an important finding because the most published and widely disseminated education statistics are cross-tabular and stress prior educational attainment as a primary and direct mechanism for adult learning. Also, the effect of early educational attainment on midlife educational participation is highly restricted. A high level of early educational attainment does not lead to subsequent educational consumption in the middle adult years. Nor is there evidence of a gradient (monotonic) effect of early educational attainment on adult reentry: Only those without degrees but some college are more likely to return to school. The lack of a gradient effect suggests that labor market-related factors filter the effects of initial education. Our findings support a "credentialing" motive that responds to the wage advantages of B.A. degrees in today's economy (Elman and O'Rand, 2000). The benefits of early schooling appear to reside in their prior effects on work careers and job matching across market sectors. Yet many adults with labor market disadvantages and subsequent perceptions of job insecurity do exhibit agency and make their way back to school. Consequently, the educational career is not a singular process, but a loosely coupled trajectory that is responsive to labor market forces.

Three groups, African Americans, ethnic minorities, and union members, require closer study. African Americans are closing the gap in high school completion and college entry (although not college completion) and are more likely to participate in education at midlife than other subgroups except for other non-Hispanic minorities. Perhaps some aspects of restructuring introduce new opportunities to these previously marginalized workers. Restructuring brings a "flattening" of some organizational hierarchies and provokes social comparison processes which, appear to give rise to improved expectations and more risk taking. Higher quality, longitudinal data are needed to examine whether life course processes of cumulative dis/advantage (O'Rand, 1996) and/or opportunity hoarding (Tilly, 1998) are indeed at work at midlife and, if so, how.

Union members also present an interesting case. They were traditionally viewed as advantaged in the labor market before the sustained effects of restructuring took their toll. Why does union membership not confer perceived job security? The mid-1990s are associated with putatively high employment rates and economic rebound. But union members may have responded less to business cycles, including the mid-1990s cyclic improvement in the economy, than to longer term corporate and market restructuring (Davis, Haltwanger, and Smith, 1996; Salzman, 1998). Published data on mass layoffs show no appreciable decrease in the number of layoffs per annum from 1995 to 1999, ostensibly a period of economic recovery (Bureau of Labor Statistics, 1999). Union workers' concerns may reflect their perceived higher risks of disadvantage with job loss or displacement than other workers. They also are more likely to participate in education than others, including those in more advantaged subgroups.

Thus, labor market conditions primarily shape the work-related educational activities of middle-aged persons, propelling them toward nonnormative patterns that may conflict with other life roles. Motivation for participation is partly rooted in perceptions of job insecurity, the pursuit of college credentials, and/or special skills. These motives are enhanced, if not engendered, by economic restructuring. Adult participation also reflects the institutionalized support for adult learning stemming from employers and from occupational requirements for certification. Of concern is that restructuring appears to reduce the prevalence of employer-provided training (Bishop, 1998; Zemsky, 1998) and highly skilled jobs requiring certification.[13] Also, prior certifications may not help mature workers who change occupational sectors for reemployment.

Past educational achievement does not protect middle-aged workers from perceived job insecurity and does not closely predict their educational reentry. This result supports the argument that the education–work career relationship is not anchored strictly in early educational attainment. It also suggests that the long-term role of education in the work career deserves more attention. Why do adults return to school? Does *early education matter less* in restructuring labor markets or does *current educational participation matter more* for purposes of reemployment and marketability? What is it about education that matters over time? And how does it matter? Early and late educational participation appear to be loosely coupled and not necessarily continuous processes of resource acquisition. Future research is needed to examine the forms and outcomes of resource acquisition at midlife.

[13] Technology shifts across industries involve task automatization and a growing use of paraprofessional and semiskilled workers. As a consequence, employers demand relatively fewer skilled and professional workers; most employment demand is for minimally skilled service workers (Rosenthal, 1995; Osterman, 1995).

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