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Higher education and desirable work: Open admissions and ethnic and gender differences in job quality

Hyllegard, David, Ph.D.

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U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

HIGHER EDUCATION AND DESIRABLE WORK:

OPEN ADMISSIONS AND ETHNIC AND GENDER DIFFERENCES IN JOB QUALITY

by

David Hyllegard

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Date

Chair of Examining Committee

January 22, 1992
Date

Executive Officer

Michael E. Brown

William Kornblum
Supervisory Committee

The City University of New York

Abstract

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by

David Hyllegard

Advisor: Professor David E. Lavin

While there has been much research on the effect of educational attainment on occupational status and earnings, relatively little is known about its impact on other dimensions of work, such as job authority and work complexity. This dissertation examines the influence of higher educational credentials on these two work qualities, and asks whether education provides white and minority men and women comparable access to jobs involving such work. To do so it uses longitudinal data on blacks, Hispanics, and whites who attended the City University of New York after it initiated its landmark open-admissions policy in 1970. That policy created educational opportunity for disadvantaged minority students who otherwise would have had no chance to attend college. Its ultimate aim was to enhance chances for desirable jobs and thereby narrow inequalities separating blacks and Hispanics from whites.

Analyses reveal that open admissions increased access to jobs involving complex work and authority among individuals who would not have gone to college in the absence of the policy. Nonetheless, the

burden of past educational and economic disadvantages with which minorities entered college diminished educational attainments which, in turn, hurt chances to compete for good jobs. Moreover, labor market conditions favoring whites over minorities with similar education and work experience imposed an additional constraint on access to desirable work. Yet, especially for the large number of blacks and Hispanics who earned bachelor's and postgraduate degrees, the quality of work life is well ahead of where it would have been without the opportunity created by the policy. Gender disparities in work complexity and authority favoring males stem from the relationship between sex-typed college majors and employment in sex-segregated occupations, and from the way these occupations are distributed over the public and private employment sectors. Policies such as open admissions add to opportunity in the labor market, but effects are limited by wider institutional conditions.

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INTRODUCTION

While there has been much research on the relationship of educational attainment to occupational status and earnings, relatively little is known about its effect on other dimensions of work, such as job authority and work complexity. This study examines the influence of higher educational credentials on these two work qualities. In doing so, it will assess whether the education that minority men and women obtained, largely as a result of the City University of New York's open-admissions policy, has enabled them to acquire high-quality jobs. That policy was designed to boost educational attainments among disadvantaged minority students and to enhance opportunities for desirable jobs, thereby narrowing socioeconomic disparities separating them from whites. In a nutshell, this research aims to broaden the scope of stratification research while also evaluating one of the nation's most important educational opportunity programs.

The major outlines of the open-admissions policy and a brief overview of the events leading to its implementation are described in the first part of chapter one. The second section focuses on the changing social and historical conditions that have led workers to place greater emphasis on intrinsic rewards of work, particularly the rising educational attainments of the labor force. The study's specific research objectives are presented at the end of the chapter.

Chapter two attempts to unravel why there is relatively little

research on non-prestige dimensions of occupational stratification. Although the three main theories of education and social stratification (in their own ways) argue that educational attainment is an important determinant of high-quality jobs, this has not been a topic of sustained research. To understand why this is, I look at the key organizing objectives that have guided the development of social mobility research in the United States from approximately 1945 to the present.

Chapter three presents the data and methods used in this research. The work complexity and job authority variables are discussed in detail and assessments of their construct validity are presented.

Chapter four examines the effect of educational attainment on work complexity, paying particular attention to the role of education in narrowing ethnic and gender disparities in access to complex jobs. A parallel analysis for job authority is presented in chapter five.

Chapter 6 discusses the significance of the study's findings for theory and research in social stratification. It concludes by describing the successes and limitations of the open-admissions policy in achieving its bottomline goal of improving the occupational chances of disadvantaged minority groups and thus promoting social and economic equality.

CHAPTER 1

OPEN-ACCESS HIGHER EDUCATION AND DESIRABLE WORK

The heightened concern with equality of social and economic opportunity since mid-century has made the study of education and social stratification an area of considerable interest to social scientists and policy experts. This issue has typically been addressed by examining the effect of educational attainment on occupational status and earnings (e.g., Blau and Duncan, 1967; Sewell and Hauser, 1975; Featherman and Hauser, 1978; Jencks et al., 1972, 1979). Largely overlooked by this tradition of research is the influence of educational attainment on qualities or attributes of work itself.

This study examines how higher education affects access to nonmonetary yet rewarding qualities of work, and asks whether education provides similar payoffs in work qualities to white and minority men and women. To do so it uses longitudinal data on blacks, Hispanics, and whites who attended the City University of New York after it initiated its landmark open-admissions policy in 1970, one of the last examples of the 1960's commitment to the principle that social policy could and should advance equity. By examining whether the educational attainments that were largely made possible by this policy helped disadvantaged minority students obtain high-quality jobs, it sheds light on the impact of open-access higher education policy in equalizing life chances among minorities and whites.

Open Admissions at The City University of New York

In the 1960s education emerged as a focal point for addressing the seemingly intractable problems of poverty and racial inequality. Because schooling loosens the ties between social origins and adult destinations, the equalization of educational opportunity was widely perceived to be an effective means of diminishing socioeconomic disparities. The most ambitious program to extend access to higher education to economically and educationally disadvantaged minority groups took place at the City University of New York (CUNY), the nation's third-largest university system and it largest urban university.

By the 1960s CUNY was no longer fulfilling its self-proclaimed historic mission of providing a broad avenue of social mobility to New York City's less fortunate residents. With the baby-boom generation reaching college-going age at a time when aspirations for post-secondary education were rising, the demand for college education greatly exceeded the university's means. Even with the addition of three community colleges in the 1950s, the institution could not accommodate the many students who wanted to attend. Given that applicants outnumbered available seats, competitive academic standards for admissions to CUNY grew increasingly stringent. A high school average generally in the mid- to upper 80s was required for admission to four-year senior colleges (in the 90s at some schools), and students needed at least a 75 to enter the community colleges. Because black and Hispanic students typically had weak high school academic records, these stringent entrance requirements essentially excluded them from senior colleges and even left them underrepresented in two-year schools (Lavin, Alba, and

Silberstein, 1981).

As a publicly supported institution the disproportionate exclusion of the city's minority residents raised serious concerns about the propriety of a selective admissions policy. The university's administration was clearly aware of this issue and in the summer of 1966 additional state funds were secured to admit a larger freshman class in the fall, establish a construction fund for future growth, and begin a special minority admissions program in the four-year colleges known by the acronym SEEK (Search for Education, Elevation, and Knowledge). This was seen as a first step in broadening access. The 1968 CUNY master plan proposed that by 1975 every graduate of New York City high schools would have a place in university "according to the following stratified scheme: (1) the top 25 percent of high school graduates would be offered admission to a senior-college baccalaureate program; (2) the top two-thirds of graduates would qualify for community colleges (the top half would be eligible for transfer programs, while the rest would qualify for career programs); (3) about 6 percent would be admitted to senior colleges via the SEEK program--and thus outside the regular admissions procedure--and about 4 percent would be admitted to community colleges via the College Discovery program; (4) all others could enroll in 'educational skills centers' that would provide job-oriented technical training" (Lavin, Alba, and Silberstein, 1981: 6-7).

The timetable and content of this plan were soon to be superseded. Against the backdrop of the 1960s preoccupation with racial inequality, student demonstrations erupted at City College in the spring of 1969 and a group of minority students, along with some activist whites, occupied campus buildings and issued a set of demands, including one for a

drastic increase in minority enrollments. After complex negotiations, a decision was made by the CUNY system's board of trustees to initiate an open admissions policy in the fall semester of 1970 that guaranteed a place in the university for all graduates of New York City high schools.

While open-access policies have a long tradition in American higher education, the program at CUNY contained elements not seen in other systems. First and foremost it was designed not simply to broaden access to college, but to create wider opportunity for baccalaureate completion. This focus reflected the awareness that a B.A. had become virtually a prerequisite for desirable work and good earnings in the modern labor market. This viewpoint was strongly voiced by the minority members of a special commission that had been appointed by CUNY's trustees to formulate a set of admissions criteria. They expressed their concern about possible tracking of minority students into community colleges this way:

> Less than fifty percent of Black and Puerto Rican students who enter high school graduate; the majority of the survivors fall in the bottom halves of their classes, with large numbers graduating with averages below seventy (70). What, one must ask, will be their earning capacities and ability to provide for their families twenty years hence, in competition with their white contemporaries who will have gone to the senior colleges and graduate schools? What will be their relative earning capacities even if they finish two-year career programs in community colleges and go on to become X-Ray technicians and low-level managers in factories? In short, we see unending societal clash unless this vicious educational cycle is smashed. We propose to do this by giving <u>all</u> high school graduates a fair and equal chance to achieve a B.A. degree. (University Commission on Admissions, 1969: 62).

Responsive to these concerns, the formal admissions model offered students a place in a senior college if they earned at least an 80 average in their academic college preparatory courses or ranked in the

top 50 percent of their high school graduating class. The second criterion assured that the top half of the class in ghetto high schools, where grades tended to be lower, could get into a four-year school. Consequently there was much less racial sorting based on high school academic records between the four- and two-year tiers of the university than is found in other open-access programs, such as California's more stratified three-tier university system (Jaffe and Adams, 1971; Lavin, Alba, and Silberstein, 1981: Chapter 4).

In accordance with its baccalaureate emphasis, the second major feature of the policy was liberalizing transfer between the system's fifteen two- and four-year colleges. (In 1970 there were seven two-year colleges and eight four-year colleges, in the following year another community and senior college were added to the system.) Graduates of the community colleges were guaranteed admissions to a senior college with full credit. Thus in principle, the community colleges were not dead-end institutions whose primary function was to provide terminal vocational education.

Another unique aspect of the program was the university's commitment to create an open door to higher education and not a revolving door whereby underprepared students are admitted only to dropout after a semester or two. To increase chances of college completion among the many students with weak academic preparation, large scale programs of compensatory education, supportive counseling, and other related services were implemented. In addition the university decided that students should not be dismissed for academic reasons during the grace period of the freshman year. In effect, the responsibility for academic success lay not only with the students, but also with the institution.

Also contributing to the likelihood of acquiring a college education was the institution's long-standing policy of free tuition (see Lavin, Alba, and Silberstein, 1981, for a fuller discussion of the policy and the events leading up to its implementation).

As the research on open-admissions has shown, the policy substantially increased minority enrollments. For example, over the first three years of the program the number of freshmen admitted to the university averaged 34,000, almost double the size of the class that entered in 1969, the last year before the new policy began. "The number of entering blacks and Hispanics also surged. Minorities constituted about 10 percent of the 1969 freshmen but were close to 25 percent of the students who entered between 1970 and 1972. When the increased size of these classes is taken into account, the number of minority freshmen nearly quintupled, jumping from almost 1,700 to more than 8,000 annually" (Lavin and Crook, 1990: 397-398).

Higher Education and the Quality of Work Experience

The goal of the open-admissions policy was to dramatically increase opportunity for college and thus provide a pathway to desirable jobs, thereby reducing socioeconomic inequalities separating minority and white communities. While the educational outcomes of open admissions have been described (Lavin, Alba, and Silberstein, 1979, 1981; Alba and Lavin, 1981; Lavin et al., 1986; Lavin and Crook, 1990) and an early analysis of the effect of educational attainment on earnings has been reported (Lavin, Murtha, and Hyllegard, 1989), we do not know if the policy enhanced opportunity for intrinsically rewarding work experience. However we do know that many of the students who entered CUNY after the

program began also hoped that a college education would improve their prospects for satisfying employment (Lavin, Alba, and Silberstein, 1981: 107; also see page 13 below). These students' desire for middle class jobs is hardly surprising. According to Carnoy and Levin (1985: 161), individuals and families "...demand schooling largely for social mobility. Higher levels of educational attainment are associated with better occupational opportunities and incomes, and these expectations of a better job and income are important factors that motivate students to obtain additional schooling." In addition to enrolling in college to better one's odds for higher earnings and a good job, the college experience broadens students' orientation towards work and its range of potential rewards. Studies of the impact of college on students indicate that seniors place less emphasis than freshman on extrinsic rewards of work (e.g. income, job security, status) and more emphasis on intrinsic qualities such as opportunities for self-expression, use of special talents, and independence (Bowen, 1977: 109; Feldman and Newcomb, 1973: 17-19; Strumpel, 1971).

Though more prominent among the college educated, the desire for intrinsically rewarding work is a more general social phenomenon whose historical shifts and turns are perceptively described in studies by Moberg (1980), Rodgers (1974), Zuboff (1988), and others. They suggest that the social definition of work stressing individual development and fulfillment is most strongly felt in pre- and postindustrial America. The following overview of changes in the meaning of work during this period highlights the role of education in the current era, and provides a backdrop to chapter two's discussion of social mobility research.

Prior to the onset of large-scale industrial production, work was

regarded as a means of self-determination and economic independence. The antebellum North was populated by many independent farmers, self-employed craftsmen, shopkeepers and small businessmen. Even those who were employed in workshops and the small industrial enterprises had strong feelings of self-reliance since they possessed valuable skills and made many of the day-to-day decisions concerning the work process (Moberg, 1980; Rodgers, 1974; Zuboff, 1988: 227). However as the conditions and nature of production changed in the years ahead, this conception of work lost its social foundation.

In the decades around the turn of the century the economy rapidly industrialized and wage labor became the normative form of employment. In the wake of this transformation the idea of self-determinantion through one's own efforts increasingly came into conflict with the hierarchical organization of factory work with its rigid rules, mechanical pacing and delimited tasks demands (Rodgers, 1974: 125-126). Over time a different model of individual achievement emerged which better fit the opportunities extended by the maturing market economy. Popularized by social reformers, public schools and advertisements, it emphasized social mobility via the acquisition of non-productive property, such as a house or money in the bank (Ewen, 1976; Goldman and Tickamyer, 1984; Moberg, 1980). Although people continued to identify with work, these feelings had less to do with the inherent substance of work, an ethic of craftsmanship, and instead stressed the monetary benefits that flow from a job (Mills, 1951: 235-238; Yankelovich, 1979: 6-9). Thus by the 1950s and early 1960s, with the rationalization of both blue- and white-collar work in giant industrial, corporate and governmental bureaucracies, the sense of work as a job, as an instrumental rather

than consummatory activity reached its heyday (Moberg, 1980; Yankelovich, 1974, 1979).

In the 1960s and early 1970s a number of developments produced another shift in the social outlook on work. First, blacks demanded equal access to well paying, secure jobs. Later women challenged their role as homemaker and the traditional social division of labor between the workplace and home (Kessler-Harris and Sacks, 1987). Like blacks, women sought economic independence, the chance and freedom to chart the course of their own lives. In the meantime the late sixties saw the emergence of cultural values emphasizing the importance of forms of work that promote intrinsic job satisfaction. A review of survey literature indicates that during "...the 1940s and 1950s workers called steady work the most important thing they wanted from their job... By sharp contrast, in a 1969 survey interesting work came first and job security was rated seventh, and six of the eight most desired aspects of work related to job content" (Strauss, 1974: 63). This change in perspective went well beyond opinion surveys. In the late sixties and early seventies discontent with alienating work surfaced as a major social issue. There were a flurry of articles and reports in newspapers, magazines and on television about worker disaffection. Led by teachers and hospital workers, public sector employees engaged in strike actions and union organizing on an unprecedented scale. Wildcat strikes against the wishes of the union hierarchy reached a postwar record. The best known instance of rebellion against work occurred in 1972 when workers engaged in wildcat strikes, sabotage, high absenteeism, drug use, and other disruptive actions at the General Motors Lordstown, Ohio, plant to protest management's efforts to increase the speed of the assembly line

(Aronowitz, 1973; Davis, 1986).

Underlying the upsurge of worker unrest was the mismatch between the aspirations for challenging work among the new generation of young workers, without personal memory of the economic hardships caused by the great depression, and authoritarian production systems developed by industrial engineers who felt that tasks should be routinized and discretion kept to a minimum (Aronowitz, 1973; Moberg, 1980). As numerous studies document, the key to the rising demand for quality of work experience was the rising levels of formal education of the American population. Having paid their dues in school the baby-boom generation of workers decided to stake a claim for work that treated them as adults: work where they could be involved, challenged, and participate in decision making (e.g., Aronowitz, 1973; O'Toole, 1973; Yankelovich, 1974, 1979; Zuboff, 1988).

Yet it is possible that this orientation toward intrinsically challenging work diminished in subsequent years. The decline in economic prosperity beginning in the mid-seventies and continuing for at least a decade undoubtedly tempered these values to some degree. Reflecting this change is the widely reported concern among recent college students for their economic futures. This phenomenon does not necessarily mean that we have entered a period in which pecuniary returns to work far outweigh intrinsic considerations. A review of available data by Kanter (1978) found that despite the onset of high unemployment and inflation in the 1970s, people continued to look to work as a source of nonmonetary as well as monetary benefits, particularly the college educated (also see Hall, 1986: 87).

Like other educated workers, the former students who began college

at CUNY in the early 1970s desire interesting work. In 1984 they were asked a number of questions about work and success. Responses suggest a high regard for intrinsic work rewards. For example, over 80 percent of those with an associate or higher degree disagreed with the statement that the salary a job pays is much more important than whether the work is interesting, and nearly 65 percent rejected the idea that job security is the most important aspect of work. On the positive side, over 40 percent strongly preferred a job that demands their initiative.

Additional evidence for the importance of nonmonetary qualities of work in the evaluation of work experience is provided by a recent study by Jencks, Perman and Rainwater (1988). Based on a national survey of working men and women, the authors discovered that nonmonetary attributes of work, for instance task variety, autonomy, opportunity to learn new things and a number of organizational characteristics, as a group outweighed earnings in determining job desirability. Of particular interest to this study are their findings that group inequalities favoring whites and males are larger for nonmonetary than monetary job attributes, and that educational attainment has a greater impact on nonmonetary qualities. In other words, schooling tends to provide greater access to these rewards than to monetary ones.

While the authors caution that their findings are provisional, such startling results make it hard to avoid their advice that nonmonetary measures be used when analyzing labor market outcomes. Furthermore, given that desirable work is one of the payoffs that students expect from college and continue to expect in the labor market, research on education and social stratification needs to widen its focus to include work characteristics besides occupational prestige and earnings to

better assess the role of education in enhancing social and economic life chances.

The Study

The key issue addressed by this study is how educational attainment influences access to nonmonetary yet rewarding work qualities among college educated minorities and women. To examine this issue I focus on two dimensions of work: job authority and work complexity. Evidence indicates that those highly placed in the hierarchy of authority generally have less routinized tasks, more status, greater decision making responsibility and higher earnings (Kohn and Schooler, 1983: 212; Kluegel, 1978; Wolf and Fligstein, 1979a). Assessing the extent to which minorities and women have access to positions of authority sheds light on their attainment of influential organizational roles--ones typically held by white males. Whereas job authority implies managerial responsibility in a hierarchically structured workplace, work complexity pertains to the cognitive demands associated with different work activities. Specifically, work complexity refers to the degree to which task situations require thought and independent judgment (Kohn and Schooler, 1983: 106). As the extensive research of Kohn and Schooler (1983) has demonstrated, it is a central property of work that differentiates challenging jobs from more routine, less demanding ones.

Although both of these job characteristics have an obvious connection with intrinsically engaging work, they have other important benefits. Jobs that require making important decisions, solving problems, being challenged by task demands, and the like, enrich work skills which, in turn, improve chances for promotion to higher positions (Kohn

and Schooler, 1983). Moreover, in the context of the occupational upgrading that has accompanied the transition to service rendering and information-processing jobs, the training and ability to do demanding work may be an increasingly important index of socioeconomic advantage (Harvey, 1989; Kasarda, 1983; Lichter, 1988).

In examining access to these job dimensions, I assess whether the education that was largely made possible by the open-admissions policy enhanced minorities' quality of work life and improved their position vis-a-vis their white peers.[1] Another concern is whether there are sex differences in obtaining high quality work. Although the open-admissions policy had no specific gender focus, sex disparities in labor market outcomes are well known (cf., England and McCreary, 1987), and so I shall also explore the issue of gender differences.

Analyzing these issues requires posing a number of specific, testable questions. How have students who left college prior to completing a degree fared relative to degree holders? Among the latter, what is the comparative value of an associate, bachelor's, master's, and an advanced or professional degree in obtaining desirable work? This question is especially pertinent since the labor market value of a two-year college degree has been the subject of sharp debate. On the one side are proponents of community colleges who believe the A.A. promotes social mobility; on the other are critics who see these schools as a key component of educational stratification that funnels students into low-level white-collar and technical jobs (see Dougherty, 1987, for review). In addition to assessing credentials' relative value, my other major concern is their effect on group differences in work qualities. Do comparably educated groups obtain jobs of similar complexity and

authority, or do whites and/or males remain advantaged? Further, is there a pivotal point on the educational ladder where ethnic and gender disparities are dramatically reduced?

To address these questions this study uses an extensive longitudinal data file on students who entered CUNY in the first three years of the open-admissions program (1970-1972), containing information on social origins, educational performance and attainments, employment history, job characteristics and other variables, through 1984. The strategy of analysis involves first, presentation of rates of attainment for the two outcome variables by ethnicity, sex and education. In the second step regression models are estimated to explain group differences in these outcomes. In addition to ethnicity, sex and educational attainment, the other predictor variables include measures of socioeconomic family background, work experience, public- versus private-sector employment, and union membership.

Although this research is limited to former students who enrolled in CUNY after it began its open-admissions policy, its results have more general implications. The open-admissions policy aimed to create more educational opportunity than other open-access models, therefore its results provide an indication of the outcomes possible under the most favorable conditions. Moreover, CUNY is located in a city that is arguably the leading example of a postindustrial city--where less than 12 percent of employment is in manufacturing and nearly two-thirds is in services (Mollenkopf, 1988; U.S. Dept. of Labor, 1988), and which contains large concentrations of lower-class blacks and Hispanics, two of the most disadvantaged groups in the nation and the main focus of opportunity programs in higher education. Assessing whether open-

admissions enabled its minority beneficiaries attain challenging jobs will help to tell us whether open-access higher education is a viable policy for addressing the problem of minority underemployment that is so prominent in the nation's urban centers (Kasarda, 1983; Lichter, 1988; Wilson, 1987).

In addition to these policy considerations, a fundamental premise of this study is that socioeconomic attainment research, by focusing on occupational prestige and earnings, has exhibited an overly narrow conception of labor market standing. By exploring the relationship of education to complex work and authority this analysis contributes to our understanding of other dimensions of occupational inequality.

ENDNOTES

1. As stated earlier, data on the 1970-1972 freshmen classes indicate that the open-admissions policy dramatically increased the number of minority students enrolled at CUNY. Most of these students would not have been admitted were it not for the policy. Based on the admissions standards in place in 1969, 74 percent of blacks in senior colleges and 79 percent in the community colleges would not have had high enough high school records to be admitted. Similarly, 49 percent of Hispanics in the senior colleges and 64 percent in the community colleges would not have been admitted (cf., Lavin and Crook, 1990: table 2). Moreover, the policy undoubtedly encouraged many minority students to attend CUNY who otherwise would not have, though they may have had high enough high school records to be admitted prior to the liberalization of admissions standards.

CHAPTER 2

EDUCATIONAL ATTAINMENT AND DIFFERENCES IN JOB QUALITIES: THEORETICAL PERSPECTIVES AND EMPIRICAL ANALYSES

Although theories of education and modern society suggest that differences in educational attainment result in unequal access to jobs with challenging work, decisions making power, and the like, until recently this issue received little empirical attention. To try to understand why this is, I trace the development of social stratification and mobility research from mid-century to the present. Particular attention is devoted to recent trends in status attainment research and the few studies that analyze non-prestige dimensions of occupational stratification. Both the theoretical analyses of education and work and findings from the empirical investigations help us frame and interpret the analyses of work complexity and job authority that are presented in subsequent chapters.

Theoretical Perspectives on Education and Work

There are essentially three macro sociological theories on the role of education in society: functionalist, neo-Marxist and neo-Weberian. The main point of contention differentiating these perspectives concerns the way education is related to social stratification and mobility. Does schooling (1) promote social mobility and equality of opportunity, (2) act to reproduce the class structure or, (3) provide an arena to

accumulate credentials that help privileged status groups maintain their superiority? Because the role of schooling in the relationship of socioeconomic origins to socioeconomic destinations is such a pivotal issue in the sociology of education, and since these perspectives view this process so differently it is easy to overlook that they all consider educational attainment to be an influential determinant of valuable work characteristics. In examining this issue I do not provide a comprehensive overview of these theories, as a number of excellent reviews of this literature exist (e.g., Hurn, 1985; Karabel and Halsey, 1977). Rather I describe how each perspective links education to differences in desirable work qualities.

Broadly speaking, functionalism views social institutions as interdependent units that act in concert to sustain normative patterns of behavior. Schools are conceived as institutions providing youth with cognitive and technical skills and the cultural outlooks necessary for the performance of work, family, and civic roles. By relying on the criteria of ability and effort, schools reward hard working and talented students with high grades and promotions to higher levels of the educational system. This process of meritocratic sorting functions as an efficient and democratic pathway of social mobility that fulfills the need to rationally place able and motivated individuals in society's most important positions.[1]

A premise of the functionalist theory of education, particularly among those who analyze the relationship of education to advanced industrialization, is that modern developments in science, technology, and the like have caused the proportion of jobs dependent on manual labor to decline while those utilizing cognitive skills have increased.

This has created an "...immense growth of demand for more highly trained and educated people of all kinds" (Trow, 1977 [1961]: 111). In the wake of this transformation it is the educational system that society charges with transmitting occupationally relevant skills to succeeding generations of adults. Karabel and Halsey's (1977: 9) discussion of Burton Clark's Educating the Expert Society (1962) illustrates this point:

> Burton Clark...put forward a lucid version of what might be called technological functionalism. Emphasizing the rapidity of technological change, Clark declared that, "our age demands army upon army of skilled technicians and professional experts, and to the task of preparing these men the educational system is increasingly dedicated" (1962:3). Seen in this light, the expansion and the increasing differentiation of the educational system were inevitable outcomes of technologically determined changes in occupational structure requiring ever more intricate skills.

Randall Collins (1979: 7) summarizes the relationship between education, job demands and socioeconomic mobility put forth by this theory as follows:

> Education prepares students in the skills necessary for work, and skills are the main determinant of occupational success. That is, the hierarchy of educational attainment is assumed to be a hierarchy of skills, and the hierarchy of jobs is assumed to be another such skill hierarchy. Hence education determines success, all the more so as the modern economy allegedly shifts toward an increasing predominance of highly skilled positions.

In effect, high-levels of schooling are required to enter the upper-echelon of the occupational hierarchy where jobs become increasingly complex and likely entail more responsibility. Or, to put it another way, educational sorting results in the unequal distribution of work qualities such as cognitively challenging task demands, the need for advanced training, decision making authority, and the like.

In contrast to functionalism's emphasis on education as an institution committed to equal opportunity and social mobility on the basis of individual talent and motivation, neo-Marxist educational theorists advance a social class reproduction model of schooling.[2] So that class divisions remain intact schools socialize people for different jobs according to social origins and not to any significant degree on the basis of individual talent. Schools serving wealthy districts enhance educational aspirations and cultivate the values and personality characteristics commensurate with the demands of professional and managerial work. They "...encourage students to work at their own pace without continuous supervision, to work for the sake of long-term future rewards, and to internalize rules of behavior rather than depend on specific and frequent instruction" (Hurn, 1985: 65). The education that lower- and working-class students receive tends to have the opposite affect: diminished educational aspirations, obedience to authority, acceptance of low-level white- and blue-collar work. In the words of Bowles and Gintis (1976: 131-132), the

> structure of social relations in education not only inures the student to the discipline of the work place, but develops the types of personal demeanor, modes of self-presentation, self-image, and social-class identifications which are crucial ingredients of job adequacy.... Different levels of education feed workers into different levels within the occupational structure... Thus blacks and other minorities are concentrated in schools whose repressive, arbitrary, generally chaotic internal order, coercive authority structures, and minimal possibilities for advancement mirror the characteristics of inferior job situations. Similarly, predominantly working-class schools tend to emphasize behavioral control and rule-following, while schools in well-to-do suburbs employ relatively open systems that favor greater student participation, less direct supervision, more student electives, and, in general, a value system stressing internalized standards of control.

Thus by attempting to insure that children inherit their parents' class position, schools tend to mold the aspirations and abilities of students so that they obtain jobs consistent with their social origins. One of the outcomes of the reproduction of class inequality is the unequal distribution of work qualities that are associated with different levels of the occupational structure--work that is self-directed versus other-directed, having decision making power, and so forth.

The neo-Weberian theory of education has been most prominently articulated by Randall Collins.[3] His analysis of educational expansion in America centers on the pursuit of interests by contending status groups.

Historically educational institutions have typically been controlled by countries' superordinate groups. They serve the elites' interests by promulgating their values, ideals, standards and tastes, and as gatekeepers that control access to important and powerful positions. But because of its massive scale and highly decentralized, federated structure the United States' educational system deviates from this pattern. Although American schools generally teach the values and manners of the dominant Anglo-Protestant elite, education is widely available. This has permitted disadvantaged groups to use schooling to improve their social standing. This, in turn, forces privileged groups to acquire even more education in an effort to maintain their advantages.

The contest for credentials has resulted in an over supply of educated labor and an increase in the educational requirements for most jobs. As a way to rationalize personnel selection, the use of credentials serves primarily to certify the acquisition of attitudes, behaviors and values, rather than technical training or expertise. Since

this process bears little relation to the skills needed for work role demands, credentials exclude otherwise competent individuals from jobs they could perform. But for already privileged groups there lies a direct payoff: education "...has enabled them to carve out professional and technical monopolies over lucrative services and vulnerable organizational sectors" (Collins, 1976: 251).

This conceptualization of the linkage of schooling and work lies in sharp contrast to functionalist theory but concurs with the Marxist position that education perpetuates socioeconomic inequality. The underlying reason for this outcome is strikingly different however. Instead of primarily imposing schooling on working- and lower-class youth as a means of socialization for undesirable work, Collins' argues that privileged groups transmit cultural and social advantages to their children to enhance their academic chances. For example, because whites generally live in more affluent communities than minorities they attend better schools and are more apt to be exposed to college preparatory coursework in junior and senior high school. In addition they may be better equipped to convey the manners, dress, and linguistic style of the dominant, middle-class culture which often influences teacher evaluations of student ability resulting in higher grades as well as increased encouragement to set high academic and occupational goals (for a review, see Persell, 1977). In short, Collins' argues that dominant groups claim education for themselves. In doing so they are better positioned to acquire jobs with high earnings, prestige, authority, autonomy, and the like (Collins, 1971, 1976, 1979).

In summary, each of these perspectives relate educational attainment to differences in job characteristics. Whether education produces

cognitive skills, class-reinforcing socialization or credentials, it enhances opportunity for workplace authority, challenging task demands, and other valuable work characteristics. Despite these theoretical arguments the distribution of work characteristics has received little attention in research on labor market effects of educational attainment (Hall, 1983). To understand why this is we need to look at the organizing objectives of social stratification and mobility research in the United States during the third quarter of the century, or from about 1945 to 1970.

Themes in Social Mobility Research

The dominant question that occupied social stratification research in the decades around mid-century was how open the opportunity structure was to social advancement (Coxon and Jones, 1975: 9-15; Knottnerus, 1987; Page, 1969: xvii-lxvii). In assessing this issue, social mobility was conceived mainly in relation to achievement in the marketplace while work-related inequities were largely ignored. This can be illustrated by examining two developments in the field: the dominance of a Weberian perspective on stratification, and the measurement of occupation in terms of prestige and status.

From an abstract vantage point, sociology's endorsement of Weber's theories of stratification against Marx's set the parameters for analyzing the social hierarchy. As Parkin (1978: 602) observes, dating from the 1940s American sociology put forth a selective reading of Weber's analysis of social stratification "...as a corrective to, or displacement of, Marx's 'economic determinism' by giving proper stress to the role of status factors which operate independently of class and dilute

its social effects." The theoretical consequences of this are substantial. The unequal distribution of wealth, goods and power, which forms the basis of Weber's analysis is, for Marx, not the basis but the result of the prior distribution of the means of production between the agents of capitalist production, the owners and dispossessed workers. In other words, property relations logically precede market relationships, and "...to study the market without also taking into account the relations of production which underlie the market gives at best an incomplete, and at worst a misleading, account of the class structure" (Crompton and Gubbay, 1977: 18). From the Marxist perspective, then, Weberian stratification research analyzes surface manifestation of inequality--differences in life chances measured by education, occupation, income and lifestyle--while overlooking the underlying relationship of wage labor and the structured inequities rooted in production for private profit (Bottomore, 1966: 105; 1971: 194-202; Marx, 1977).

Yet especially in the middle decades of this century, American sociology regarded Weber's approach as both more appropriate and realistic for understanding the realities of American social life than what appeared as a one-dimensional class approach of Marx. Scholars were

> impressed by the fact that the distribution of rewards in American society appeared to follow a more or less unbroken continuum from top to bottom, so that any decision to impose cut-off points separating a higher class or stratum from a lower one seemed an arbitrary and pointless procedure--arbitrary, because in the absence of natural breaks in the gradient an artificial line could be drawn almost anywhere; pointless, because the resulting classes would not correspond to genuine social groupings in the sense of a shared and recognized membership.
> ... [Furthermore] numerous other factors entered the picture, including education, income, occupation, religion, ethnicity, and so on. The fact that these criteria of rank were independent of each other meant that individuals who ranked high on one dimension could rank low on others,

> making it impermissible to speak of a coherent system of stratification at all (Parkin, 1978: 601-602).

Many sociologists embraced this perspective and chose to examine the role of status factors in the construction of social hierarchies and as determinants of individual life chances. A prominent expression of this approach are the classic community studies from the 1930s and '40s by Warner, the Lynds, Hollingshead, and others. These studies typically used education, occupation, income, associations to which one belonged, neighborhood, and type of housing to determine a family's or person's community standing. In effect, social standing was viewed as based on multiple status dimensions that cut across class boundaries and thereby masked the individual's relationship to productive property, wage labor, and work inequalities (Goldman and Tickamyer, 1984).

There was an even greater acceptance of status rankings and a rejection of class as a relevant analytical category among theorists of mass society such as Parsons, Nisbet, Bell, and Wilensky. They argued that the process of modernization and the associated expansion of meritocratic norms, urbanization, and mass-produced goods had dramatically equalized access to education, home ownership, consumer items, leisure pursuits, and the like, such that it no longer made sense to speak of class differences. The distinctive feature of American society in the 1950s and '60s was its high levels of consumption and its large homogeneous middle class (Knottnerus, 1987; Page, 1969). The emphasis given to consumer goods and other markers of middle-class affluence as indicators of social standing also reflected the social outlook on work that was prevalent in these years. Because employment was increasingly concentrated in large, complex organizations that provided few opportu-

nities for intrinsic gratification, people tended to regard work more for the standard of living it could sustain rather than as an end in itself (see Chapter 1). The rewards of the social system were to be seen in the distribution of goods and services, not in how they were produced.

The disinterest in work by investigators in these years is particularly evident when one realizes that the most widely used indicators of occupation, the variable that presumably ascertains differences in work, are not based on measures of jobs' objective characteristics. Created by North and Hatt under the auspices of the National Opinion Research Center (NORC) in the late 1940s, the occupational prestige scale is based on popular evaluations of occupations' general social standing. During interviews in which respondents rated 90 occupations, they were asked: "For each job mentioned, please pick out the statement that best gives your own personal opinion of the general standing that such a job has." The choices ranged from "excellent" to "poor" along a 5-point scale. The decision to create a prestige scale based upon people's impressions of the social standing of occupations was modelled on the community studies tradition of research which had relied on residents' perceptions and definitions of local status hierarchies.

As research shifted from community studies to national surveys in the 1950s and '60s, it became necessary to rely on a few indicators of an individual's social status since it was impossible to collect detailed information on all of the factors that had been used to gauge a person's community standing. The most important innovation in this regard was the Socio-Economic Index (SEI) of occupations developed by Duncan in 1961. Although various studies depicted the extent of inter-

generational social mobility using either the NORC's prestige scale or occupational mobility tables (the cross-classification of 12 or so occupational categories to compare the occupational attainments of sons' to fathers'), both of these approaches have limitations. The classification of occupations into broad categories places rather different jobs into the same category and prestige scores only existed for 90 occupations. To preserve the characteristics of a scale while also overcoming the limited coverage of the prestige measure, Duncan created the SEI, finding that a linear combination of education and income data could accurately predict a subset of prestige scores. Using 1950 Census data he produced SEI or status scores ranging from 0 to a high of 96 for 425 occupational titles.

Given that education (often a prerequisite for entering an occupation) and income (its monetary reward) are key components of SEI, a number of scholars have suggested that its underlying construct is the role activities of occupational incumbents (e.g., Duncan, 1961; Sewell and Hauser, 1975; Hauser and Featherman, 1977). This interpretation assumes a strong functional relationship between education, the work requirements of occupations and earnings, an assumption that has been the subject of much criticism. A case in point is Collins' (1979) analysis of credential inflation. As discussed above, he argues that educational requirements for jobs often bear little relation to their work role demands, but rather act as gatekeeping devices that enable privileged status groups to maintain their hold on high-level positions (also see Berg, 1971; Horan, 1978; Kerbo, 1976; Wright, 1979). In addition to this issue, a number of studies find that occupational status as well as Siegel's (1971) more exhaustive prestige scale are

poor indicators of work characteristics. For example, Spaeth (1979) and Parcel and Mueller (1983b) argue on theoretical and empirical grounds that these measures fail to reflect job authority and work complexity. There is also evidence that these variables fail to detect that men and women are typically employed in different occupations with different task requirements (England, 1979; McLaughin, 1978). In short, occupational status and prestige are probably best understood as representing popular evaluations of the general desirability of occupations, not the content of their role demands.

All told, the optimistic portrayal of social mobility that characterized the literature in this period viewed socioeconomic opportunity as governed much more by individual status attributes than social origins. In deciding for Weber and against Marx, differences in occupational attainments were conceived as resulting from fair market processes in which people compete for jobs on the basis of skills and qualifications (e.g., Blau and Duncan, 1967: 425-432). Work-related inequalities flowing from the relationship of wage labor to capital were essentially dismissed as analytically irrelevant and/or socially meaningless. Not only did this approach tend to neglect workplace inequities but, as we will see below, little was known about the social mobility prospects of minorities and women since attention was overwhelmingly focused on the experiences of white males.

In subsequent years stratification research grew narrower in some respects and broader in other ways. On the one hand, the advent of status attainment models and standardized research procedures, which unquestionably added to the scientific reputation of the field, have been widely adopted (Featherman, 1981). On the other hand, the develop-

ment and acceptance of neo-Marxist, critical Weberian and feminist theoretical perspectives has resulted in a wider range of substantive issues and concerns, especially ones pertaining to inequality. It is to these studies that we now turn.

New Directions in Socioeconomic Attainment Research

The publication of Blau and Duncan's The American Occupational Structure (1967) revolutionized the way social mobility was analyzed and launched the status attainment tradition of research. Its major contribution was the use of path analysis models that linked the educational and occupational attainments of fathers with son's education, first job, and occupation held in 1962 into a causal sequence that explains the extent to which socioeconomic outcomes depend on the individual's social origins and prior achievements. Though the study reported many important findings, perhaps the most lasting one showed educational attainment to be the key mechanism of status transmission across generations, i.e. the effects of social origins on destinations are largely transmitted through education.

In the 1970s researchers began to expand upon Blau and Duncan's (1967) model of status attainment to address other substantive issues. In order to provide further insight into how social origins contribute to differences in educational attainment, Sewell (e.g., 1969, 1970) and his associates assessed the impact of a number of variables that intervene between origins and schooling. These analyses were very successful: the inclusion of aspirations, significant-other influence, and the like, improved the predictive power of their attainment models and suggested that students from higher socioeconomic origins receive more

encouragement to excel in school.

Another area that began to receive considerable attention was the processes of status attainment for different ascriptive groups. Even though blacks were included in Blau and Duncan's analysis, relatively little was known about the mechanisms of attainment among minorities and women since most studies were based on white male populations (Acker, 1980; Colclough and Horan, 1983). Among the findings from this research are that educational achievement is less predictable for blacks and females than for whites and males (e.g., Portes and Wilson, 1976; Alexander and Eckland, 1974), the process of occupational attainment is essentially the same for men and women (with educational attainment exerting the greatest influence for both sexes), and that women with education and occupational status comparable to men nonetheless receive substantially lower earnings (e.g., Featherman and Hauser, 1976; Treiman and Terrell, 1975; McClendon, 1976).

In part because conventional attainment models used in these and similar studies could not explain earnings inequities among women and blacks a number of researchers began to focus on the opportunity structure, suggesting that it may treat individuals and groups differently. As Kerckhoff (1984: 144) stated in a review article:

> Women and blacks, in particular, do not seem to obtain the same returns ("payoffs") from origins, early performances, or even occupational attainment as do white men. Attempts to identify the points in the attainment process where race and sex differences are found have led to further interest in structural factors which may alter the patterns of returns.

The most prominent studies that include structural variables are those that analyze the influence of labor market placement on earnings.

Although there have been a number of elaborations, the essential premise of this research is that the labor market is not a single, homogeneous market but rather is divided into monopoly and competitive sectors. Because monopoly firms control large product markets they are able to provide their workers high wages, good benefits, opportunities for promotion and relatively secure employment. In the competitive sector, by contrast, labor costs must be kept low, there are few if any benefits and little or no chance for advancement (for reviews see Kalleberg and Sorenson, 1979; and Baron and Bielby, 1980). Empirical research indicates that whites hold a disproportionate share of jobs in the former, minorities and women are overrepresented in the latter, and that neither the unequal distribution of groups in the two sectors nor the superior earnings of monopoly sector workers are due to differences in educational attainment or work experience (e.g., Beck, Horan, and Tolbert, 1978, 1980; Rosenfeld, 1983). These and other comparable analyses tell us that the opportunity structure itself plays an important role in socioeconomic outcomes, particularly with respect to race and sex inequalities.

Another example of research with structural variables are the studies by Wright and his coauthors on the relationship of class position to earnings. In one analysis, for instance, earnings monotonically increase from worker to manager to employer even when differences in age, education, job tenure, and occupational status are controlled (Wright and Perrone, 1977). A similar study suggests that an important reason why equally qualified blacks earn less than whites is because they are underrepresented in employer and managerial class positions Wright, 1978).

A more recent area of interest that is especially pertinent to this study is non-prestige dimensions of occupational inequality. This concern derives from the recognition that dimensions of work besides status and prestige may influence social mobility or other employment outcomes (Cain and Treiman, 1981; Burawoy, 1982; Hall, 1983). Hout (1984b), for example, examined whether job autonomy plays a role in father-son occupational continuity. He concludes that:

> Occupational mobility is a multidimensional process. Status is central to mobility, but the opportunity for self-direction on the job is also important. Men whose fathers ran their own businesses, professional practices, and farms are themselves more likely than other men to enter occupations that promise a degree of autonomy. The complementary assertion is equally true. Men whose fathers worked on an assembly line or in a closely supervised white-collar position tend toward occupations that are closely supervised but promise a degree of job security in return (1984b: 1402).

Other research includes Rumberger's (1981) analysis of the underutilization of educational skills on the job. Using census information on workers' education, occupation, race and sex, and adding measures of the general educational training that different jobs typically require, he finds blacks and women to be underemployed at a far higher rate than white males. Although Rumberger does not test for these effects, he argues that the costs of underemployment may well be steep: lower economic position (earnings, chances for advancement), unfulfilled expectations, increased job dissatisfaction, and even deterioration of mental and physical health. Also representative of this research is Jencks, Perman, and Rainwater's (1988) analysis indicating that nonmonetary aspects of work, taken together, are more important to job desirablity than earnings.

The non-prestige dimension of work that has received the most attention is job authority. Kluegel's (1979) study of race differences in job authority asks why is it that blacks typically earn far less than whites even though the racial gap in educational attainment and occupational status has been largely closed. As an explanation, he advances the hypothesis that equally qualified blacks are disproportionately excluded from positions with supervisory responsibility. Such a practice is not difficult since the process of promotion "...within authority hierarchies is an aspect of general socioeconomic achievement that seems singularly susceptible to particularistic manipulation. Criteria for promotion...tend to be vaguely specified; often they involve notions of loyalty, good character and leadership potential." Especially in contrast to hiring criteria, the "...very vagueness of criteria for promotion makes them susceptible to subtle manipulation for discriminatory purposes" (Kluegel, 1979: 286).

The results of his empirical analyses support this hypothesis. Blacks who are comparable to whites on various achievement characteristics nonetheless have substantially less job authority. Moreover, blacks that have made it into managerial positions tend to earn less than their white counterparts. He estimates that nearly one-third of black-white earnings inequality is attributable to the underrepresentation of blacks in management and the lower pay of those who have gained access to its ranks.

Similar analyses conducted by Wolf and Fligstein (1979a, 1979b) compare men's and women's authority attainments. Their findings reveal that "...women have considerably less control over the work of others than men, even when they have similar levels of education and occupa-

tional status. In fact, we find that the exclusion of women from supervisory positions is pervasive regardless of their education or status level" (1979a: 104).

In a study that includes white and black men and women, Mueller and Parcel (1986) explore group differences in two types of authority, "span of responsibility" (power to make decisions directly affecting subordinates), and "span of control" (the number of subordinates under a supervisor's jurisdiction). This distinction is important since most research on authority has been based on span of responsibility, whereas their data indicate that span of control is associated with higher earnings. Based on a sample of supervisors, white males are the only group to obtain substantial increments in earnings for both types of authority. Black males and white females receive a boost from span of control but not supervisory responsibility. However neither aspect of authority significantly augments the earnings of black females. Since eduction and other achievement variables are controlled, the authors conclude that pay inequities are most likely due to discrimination.

Other studies that report group differences in work authority include Kerckhoff et al. (1982), Parcel and Mueller (1983), Robinson and Kelley (1979), Roos (1981), and Spaeth (1985). Like the studies just discussed, these analyses typically find that differences in education and work experience explain some, but not all, of group inequalities in access to this dimension of work.

Although less frequently analyzed than job authority, work complexity has been extensively researched by Kohn and his associates. In summarizing its relationship to job conditions and types of work roles, Kohn and Schooler (1983: 136) state:

> The substantive complexity of work stands out as the keystone of the entire job structure--affected by and, in turn, affecting many other job conditions. Not only do ownership, bureaucratization, and hierarchical position increase the substantive complexity of work, but so, too, do nonroutinized working conditions, freedom from close supervision, greater time pressure, and, over time, job protections. The substantive complexity of work, in turn, affects several other aspects of work: Doing substantively more complex work results in doing work that is less dirty, and increases the probability of being held responsible for things outside one's control, of receiving higher income, working under greater time pressure, and working longer hours; over time, doing substantively more complex work results also in being less closely supervised, rising in the supervisory hierarchy, and becoming an owner. In short, substantively complex work is at the core of highly placed, responsible, demanding but rewarding jobs. It is the key link between the position of a job in the organizational structure and other, more proximate, conditions of work.

Drawing on these findings and his own research, Spenner (1983) argues that work complexity should be considered a central underlying dimension of job content.

Beyond the scope of my research, but yet a further illustration of the importance of complex work are Kohn and Schooler's (1983: 152) findings that it significantly influences personality. "Our longitudinal analysis repeatedly demonstrates the importance for personality of occupational self-direction--especially, the substantive complexity of work, the job condition most strongly related to social stratification in our earlier analyses. Jobs that facilitate occupational self-direction increase men's ideational flexibility and promote a self-directed orientation to self and to society; jobs that limit occupational self-direction decrease men's ideational flexibility and promote a conformist orientation to self and to society."

In contrast to the analyses of authority, their research has not been concerned with sex and race disparities in the attainment of jobs

with such work. Their primary concern has been in demonstrating the importance of occupational self-direction as a feature of social stratification affecting values and orientations, personality, leisure-time activities, and the quality of work experience. In investigating these issues, they reveal that it affects these outcomes among employed men and women and among women doing unpaid housework (1983: Chapters 8, 10, 12).

In addition to these findings, it seems to me another benefit of work complexity may be the difficulty in deskilling such work, in making routine that which is complex. If this is true, those whose work is complex may have increased job security, bargaining power to command high wages, and the like (for similar interpretations of workers' power and advanced labor processes, see Adler, 1986; Hirschhorn, 1984; and Zuboff, 1988).

As the foregoing has illustrated, researchers have broadened the scope of the original Blau and Duncan model of status attainment to explore a variety of substantive issues. These include clarifying how social origins influence educational attainment, examining the mechanisms of attainment among minorities and women, assessing the role of labor markets and class position on earnings, and looking at a number of non-monetary dimensions of workplace stratification. Of course the use of status attainment models and methodology to address such issues is not without critics. Karabel (1979: 86), for example, notes that this style of research "...has proved more successful in predicting educational attainment than occupational attainment and much more successful in predicting occupational attainment than income. Thus, at each step in the stratification process, the status attainment model--the most

powerful one we now possess--has less explanatory punch." While it is true that analyses designed to pinpoint factors accounting for variation in educational attainment have been more successful than those for economic standing, this evaluation is based on the percentage of variance explained in the dependent variable (R^2). Yet more important than the amount of explained variance, linear regression techniques enable one to assess the relative contribution of each variable in the achievement process. In addition, these techniques can be used to test whether the attainment process operates in the same way for different groups.

Another criticism popular some time ago is that this research implicitly harbors the liberal assumption that disparities in economic outcomes are primarily the result of differences in individual characteristics and abilities (Burawoy, 1977, Coser, 1975; Horan, 1978). Though some studies are open to this charge, path-analytic models and multivariate methods have been able to accommodate different theoretical perspectives and various substantive issues. Indeed, as the literature discussed here has illustrated, researchers have included structural and ascriptive variables to assess Marxists, feminists and other critical theories of socioeconomic inequality. In short, this type of research is not inherently ideological.

The analysis reported in the following chapters continues this emerging line of research. By examining how educational attainment and other pertinent variables are related to ethnic and gender attainments of job authority and work complexity it focuses on a valuable though neglected facet of socioeconomic success.

ENDNOTES

1. As a broad theoretical perspective there is no one definitive statement of the functionalist approach to education. Scholars who have written on education from this perspective include Parsons, Martin Trow, Burton Clark, Alex Inkeles and Robert Dreeben.

2. Although there are differences in the neo-Marxian theory of education, the reproduction of class relations is the pivotal concept that distinguishes this perspective from others.

3. In addition to Collins the main neo-Weberian theorists include Frank Parkin, Anthony Giddins and the somewhat more theoretically eclectic work of Pierre Bourdieu.

CHAPTER 3

RESEARCH BACKGROUND AND PROCEDURES

This chapter describes the data and methods used to examine the impact of educational attainment on valued attributes of work. It begins with an overview of the data collected in the initial years of CUNY's open admissions program and in 1984. This is followed by a discussion of the weighting procedure used to adjust the 1984 follow-up sample data for non-response bias. Work complexity and job authority are described in detail, and the explanatory variables are presented. Lastly, the analytical procedures are spelled out.

Overview of Data Sources and Sampling Procedures

This research draws on an extensive longitudinal data set assembled for the first three freshmen classes that entered the City University of New York after its open-admissions policy was initiated. The files include information on (a) social origins, attitudes and aspirations, (b) high school academic record, (c) collegiate educational performance and attainments, (d) employment history and labor market attainments as of 1984. These data form the basis of a broader longitudinal research effort on the effects of open admissions in improving life chances of disadvantaged groups (Lavin, Alba, and Silberstein, 1979, 1981; Alba and Lavin, 1981; Lavin, Murtha, Kaufman and Hyllegard, 1986; Lavin, Murtha, and Hyllegard, 1989; Lavin and Crook, 1990; Hyllegard and Lavin, in

press).

Various steps were taken to assemble this data set. In the initial stage of research two major types of data were collected. The first consists of official University records on educational background and college academic performance for the 102,780 freshmen who enrolled in 1970-1972. These records contain information on high school background, including high school average and the numbers of college preparatory courses taken, and college academic information which includes scores on standardized tests of basic skills in reading and math, the CUNY colleges and curricula to which students applied and were allocated, as well as students' academic records at CUNY from fall 1970 through spring 1975.

The second source of data consists of questionnaires administered to the 1970, 1971, and 1972 freshman entrants, generally at registration or in required freshman courses. The number of respondents to the survey for each year and the size of the corresponding populations is as follows: 1970, 13,525 of 31,596 entrants; 1971, 8,527 of 35,639 entrants; 1972, 12,725 of 35,545 entrants. The questionnaires asked for a wide range of information about social origins, attitudes, and aspirations. Among the key social origins and demographic variables are: age, gender, race and ethnicity, family income, and parents' educational attainments. The variables pertaining to aspirations and attitudes concern educational aspirations, academic self-rating, job plans after college, and reasons for going to college. Students also reported whether they were working while attending school.

The educational background information from the University records was merged with the survey data to form integrated data sets for each of

the three cohorts. Detailed comparisons of the samples and their respective populations carried out by Lavin, Alba, and Silberstein (1981, pp. 52-54, 313-317) indicate that although individuals who had stronger high school records were somewhat overrepresented in the samples, the superiority of the samples was only slight and therefore they provided a good representation of the populations.

These data were the basis for a number of studies that describe and analyze various outcomes of the open admissions policy over its first five years (Lavin et al., 1979, 1981; Alba and Lavin, 1981). The principle concern of this stage of research was to follow the three cohorts from fall 1970 through spring 1975 to determine who came to CUNY as a result of its open-access policy, where and how they were placed in the University's four- and two-year colleges, and how they fared academically.

The third source of data comes from a follow-up survey questionnaire administered in 1984. The target groups for the survey were the original samples who completed the freshmen questionnaires administered in 1970, 1971, and 1972. Because of missing addresses the follow-up sampling frame consisted of 33,573 cases from the 34,731 cases in the original cohort samples. The data collection procedure involved four steps. A first-wave mailing (first-class with postage-paid return envelopes) of the follow-up questionnaire was sent to 33,573 individuals. This yielded 3,204 respondents, 11,171 undeliverable envelopes returned by the post office, and 19,202 nonrespondents. A second-wave mailing went to these nonrespondents. It yielded an additional 1,159 respondents and 1,772 undeliverable envelopes.

In a third mailing, the questionnaire was sent by certified return

receipt (CRR). Because the sample contained a much larger number of whites than blacks and Hispanics, the first two mailing-waves resulted in a relatively small number of minority respondents. In order to increase the number of minority cases we focused the data collection efforts on the black and Hispanic nonrespondents from the previous mailing (n=2,835). This step produced and additional 475 respondents.

The last step consisted of a telephone interviewing effort directed exclusively to minority nonrespondents of the CRR mailing. Using the address and name from the postal return receipt cards we attempted to obtain telephone numbers from special telephone directories sorted by address (rather than by last name as in the standard telephone directory). If the person listed in our files no longer lived at the residence we attempted to update the address or obtain their phone number from the current resident (often a relative). Telephone interviews resulted in 274 additional minority respondents.

These procedures produced a total of 5,112 respondents to the survey questionnaire. For a variety of reasons 124 cases had to be discarded (e.g., duplicate or incomplete social security numbers in the original data file that made it impossible to integrate the new data) resulting in 4,988 usable questionnaires. Based on this total, Table 3.1 summarizes the response rate for whites, blacks, Hispanics, a residual category consisting of cases with missing ethnicity data or other ethnic groups, and the total sample. Overall, 15 percent of those in the original sample returned questionnaires. Almost 40 percent of the cases were unlocatable. Hispanics were the most difficult to locate--close to 60 percent could not be found. Using locatable cases as the base, the overall response rate was 25 percent. The response rate for each group

TABLE 3.1

Summary of Follow-up Survey Date Collection by Ethnicity

Whites	N in original sample	23,495
	Respondents	3,506
	Unlocatable	8,639
	Response rate (total pool)	15%
	Response rate (total locatable cases)	24%
Blacks	N in original sample	4,868
	Respondents	769
	Unlocatable	2,031
	Response rate (total pool)	16%
	Response rate (total locatable cases)	27%
Hispanics	N in original sample	3,190
	Respondents	482
	Unlocatable	2,031
	Response rate (total pool)	15%
	Response rate (total locatable cases)	36%
Others[a]	N in original sample	2,020
	Respondents	231
	Unlocatable	778
	Response rate (total pool)	11%
	Response rate (total locatable cases)	19%
Totals	N in original sample	33,573
	Respondents	4,988
	Unlocatable	13,312
	Response rate (total pool)	15%
	Response rate (total locatable cases)	25%

[a]This category consists of individuals with missing data on ethnicity or are from other ethnic groups.

was 24 percent for whites, 27 percent for blacks, and 36 percent for Hispanics.

The follow-up questionnaire contained questions pertaining to educational attainments as of 1984, labor market experiences, family composition, attitudes and aspirations, and satisfactions with current life situations. The educational attainment information includes all degrees earned, the year each was awarded, the major fields in which they were earned, and the institution conferring them (both CUNY and non-CUNY schools). There is also information on education beyond the last earned degree (e.g., institution attended, number of semesters completed, fields of study).

The labor market experience data include measures of years employed, year and job title of first full-time job, and the extent to which respondents worked while pursuing their undergraduate studies. For positions held in 1978 and 1984 there is information on job title, salary, type of employer (bank, hospital, etc.), public or private sector employer, full- or part-time status, and the most important source in helping the respondent obtain these positions (e.g., employment agency, relative, etc.). For the respondents' current job (i.e., the one held in 1984) there are indicators of job satisfaction, supervisory work authority, opportunities for promotion, and labor union membership. Respondents were also asked if they thought they had ever been victims of discrimination (based on race, sex, or religion) in hiring, pay raises, promotions, and layoffs.

Among the other types of information are data on marital status, the number of dependent children living with the respondent and whether child care responsibilities have interfered with employment opportuni-

ties; attitude and aspiration data pertaining to work and success; and satisfaction with numerous aspects of respondents' life situations. (A copy of the follow-up questionnaire is presented in the appendix.)

The data from the follow-up survey have been merged with the original files and the three freshman cohorts were combined to form a single subsample. The resulting integrated data file provides information on social origins, educational performance and attainments, work experiences and various labor market statuses covering the period from the early 1970s to 1984 for 4,988 individuals.

Assessing the Quality of the Follow-up Data

Assessments of the representativeness of the follow-up sample indicate that it differs in certain respects from the original aggregated sample. Most notably, CUNY graduation rates as of 1975 are higher in the follow-up sample, implying that subsequent educational attainments (and most likely occupational attainments) in this subsample would exceed those in the mother sample. To correct for such differences a weighting procedure along the lines suggested by Berk (1983) was used to adjust the follow-up sample for non-response bias. The weighting procedure involves predicting the likelihood that a given individual would have responded to the survey based on what is known about those who did respond. The characteristics thought to affect the likelihood of responding included: gender, race/ethnicity, age, income on entry to CUNY, high school average, level of entry to CUNY (senior or community college), number of credits earned at CUNY, graduation from CUNY, and several indicators constructed to assess the effect of missing values on

the odds of being in the follow-up sample.[1] This set of variables was used in a logistic regression, where the dependent variable is the log odds that someone from the original sample would respond to the follow-up survey. Separate models were developed to adjust for differences between the mother sample and the follow-up respondents on these characteristics for senior-college entrants, community-college entrants, and the total sample.

Results of the weighting procedure are illustrated in Table 3.2. The distributions and means for selected variables are arrayed by college level for the original sample and the follow-up sample. Adjusted values are shown for the follow-up sample. Three kinds of variables are presented: demographic and social origins such as age, gender, race, parents' education, and income; two indicators of secondary school academic standing, high school average and the number of college preparatory courses taken; academic achievements in CUNY, such as grade point average, credits earned, number of remedial course taken, and graduation status as of 1975.

Inspection of the table reveals that the weighting procedure closely aligns the follow-up distributions with those in the original sample. For example, the Total CUNY column shows that 39.7 percent of the respondents to the follow-up survey were CUNY graduates as of 1975 compared to 30.1 percent of the original sample. The adjusted percentage, 30.0, almost matches the original figure. Similarly the adjusted values for the high school background and collegiate academic performance variables closely approximate those in the original sample. Furthermore, the disproportionate representation of blacks and females in the follow-up sample is altered by the weighting so that the adjusted values

TABLE 3.2

DISTRIBUTIONS AND MEANS FOR SELECTED VARIABLES: COMPARISON OF ORIGINAL SAMPLE, AND FOLLOW-UP SAMPLE

	Senior Colleges			Community Colleges			Total CUNY		
	Original Sample	Followup Sample	Adjusted Followup Sample	Original Sample	Followup Sample	Adjusted Followup Sample	Original Sample	Followup Sample	Adjusted Followup Sample
Age:									
<17	21.5	23.8	22.1	5.4	6.1	5.6	14.0	15.6	14.4
18	68.8	69.5	68.3	60.6	65.4	60.7	65.0	67.6	64.8
19	6.3	4.5	6.4	16.0	13.2	16.8	10.8	8.5	11.2
>20	3.5	2.2	3.3	18.0	15.3	17.0	10.2	8.2	9.6
Missing[a]	.9	.7	1.2	1.6	1.1	1.3	1.1	.9	1.3
Gender:									
Male	50.9	46.2	50.6	47.7	41.0	46.8	49.4	43.8	48.8
Female	49.1	53.8	49.4	52.3	59.0	53.2	50.6	56.2	51.2
Missing[a]	0.9	0.7	1.3	0.8	0.5	0.8	0.9	0.6	1.1
Race:									
Black	7.1	9.0	7.2	20.6	23.7	20.6	13.4	15.8	13.4
White	83.1	82.1	83.1	64.1	60.3	64.1	74.3	72.1	74.3
Asian	2.2	1.6	2.2	1.5	1.2	1.5	1.9	1.4	1.9
Hispanic	6.6	6.6	6.4	12.0	13.7	12.4	9.1	9.9	9.2
Other	1.0	0.7	1.1	1.8	1.0	1.4	1.4	0.8	1.3
Missing[a]	2.4	2.3	3.0	3.5	2.6	3.2	2.9	2.4	3.1

	Senior Colleges			Community Colleges			Total CUNY		
	Original Sample	Followup Sample	Adjusted Followup Sample	Original Sample	Followup Sample	Adjusted Followup Sample	Original Sample	Followup Sample	Adjusted Followup Sample
Father's Education:									
Elementary or less	12.1	12.1	13.1	17.8	17.7	17.5	14.7	14.6	15.1
Some High School	22.6	21.0	21.5	29.1	28.8	29.0	25.6	24.5	24.9
High School Grad.	34.6	33.6	33.4	32.5	31.1	31.1	33.6	32.5	32.3
Some College	16.4	16.7	15.9	12.3	13.3	13.2	14.5	15.2	14.7
College Degree	9.8	10.9	10.6	6.2	6.3	6.4	8.1	8.8	8.7
Postgraduate Degree	4.6	5.8	5.6	2.1	2.7	2.8	3.4	4.4	4.4
Missing[a]	5.0	3.9	4.3	9.0	8.2	7.8	6.9	5.9	5.9
Mother's Education:									
Elementary or less	10.3	10.4	11.5	16.0	15.7	15.4	12.9	12.8	13.3
Some High School	19.1	17.0	17.1	28.2	27.1	27.3	23.3	21.6	21.8
High School Grad.	50.0	48.8	48.3	42.1	43.1	42.6	46.3	46.2	45.7
Some College	12.5	14.7	14.4	9.2	9.2	9.4	11.0	12.2	12.1
College Degree	5.9	6.3	5.9	3.6	3.7	3.7	4.8	5.1	4.9
Postgraduate Degree	2.1	2.8	2.9	0.9	1.3	1.5	1.5	2.1	2.3
Missing[a]	3.6	2.9	3.1	7.1	6.8	6.6	5.2	4.8	4.7
Income at Entry:									
<$4,000	4.9	3.7	5.2	10.1	7.9	9.7	7.3	5.6	7.2
$4,000-9,999	38.8	37.4	37.1	47.1	45.5	43.0	42.6	41.1	39.8
$10,000-14,999	36.2	37.1	36.0	28.9	32.5	32.1	32.8	35.0	34.2
$15,000-19,999	12.5	12.6	12.7	8.8	8.6	9.1	10.8	10.8	11.1
$20,000+	7.6	9.2	9.0	5.0	5.6	6.1	6.4	7.6	7.7
Missing[a]	14.0	12.9	12.7	16.9	17.1	16.7	15.3	14.8	14.5

	Senior Colleges			Community Colleges			Total CUNY		
	Original Sample	Followup Sample	Adjusted Followup Sample	Original Sample	Followup Sample	Adjusted Followup Sample	Original Sample	Followup Sample	Adjusted Followup Sample
High School Average:									
<70	3.1	2.5	3.2	31.2	26.1	31.2	16.1	13.2	15.7
70 - 74.9	8.7	7.3	8.8	31.7	28.9	31.5	19.4	17.1	19.0
75 - 79.9	23.2	19.7	23.5	23.7	26.7	24.0	23.4	22.9	23.7
80 - 84.9	28.8	28.7	27.4	9.6	12.9	9.7	19.9	21.6	19.4
85>	36.3	41.8	37.1	3.7	5.4	3.7	21.2	25.3	22.1
Missing[a]	1.6	1.0	1.4	7.8	5.0	7.2	4.5	2.9	4.1
Mean Units of High School College Prep	14.05	14.24	14.13	11.00	11.33	11.12	12.64	12.92	12.77
	(2.05)	(1.88)	(1.96)	(3.07)	(3.03)	(3.03)	(2.50)	(2.86)	(2.91)
Number Remedial Courses Taken:									
None	60.4	63.6	61.5	50.7	52.1	49.7	55.9	58.3	56.1
1-2	27.7	25.6	26.5	34.3	35.4	36.5	30.8	30.2	31.2
3-4	8.0	7.2	8.1	11.1	9.8	10.5	9.4	8.4	9.2
>4	4.0	3.4	4.0	3.8	2.7	3.1	3.9	3.0	3.5
Cumulative GPA	2.51	2.70	2.56	2.06	2.31	2.13	2.30	2.53	2.37
	(.821)	(.720)	(.812)	(.908)	(.805)	(.887)	(.861)	(.783)	(.872)
Mean Cumulative Credits Earned	80.96	90.93	82.95	43.44	55.00	46.45	63.57	74.29	66.02
	(43.05)	(38.32)	(42.18)	(33.28)	(32.57)	(33.26)	(38.52)	(40.00)	(42.41)
CUNY Status as of June 1975:									
Dropout	38.2	26.8	36.8	53.7	37.5	51.5	45.4	31.8	43.6
Persister	30.0	34.9	31.7	18.1	21.2	20.2	24.5	28.6	26.3
Graduate	31.8	38.3	31.4	28.2	41.2	28.4	30.1	39.7	30.0

[a]For each panel of the Table showing missing cases, percents are calculated with the missing cases removed from the base.

are closely aligned with the original distributions.

Because the weighting procedure was effective, it appears that the weighted follow-up sample provides a good representation of the original sample. All of the analyses in this study use the weighted follow-up data. Following the convention when using such data, the reported frequencies are unweighted.

Outcome and Explanatory Variables

Because the reliability of empirical results often depends on the way in which variables are constructed, this section describes how work complexity and job authority are constructed, and presents information to assess their validity.

Work Complexity

Work complexity is defined as the degree of thought and independent judgment required by work (Kohn and Schooler, 1983, p. 106). It refers to the level and scope of cognitive challenge inherent in different task situations. As discussed in chapter two, the extensive research of Kohn and his associates has shown complexity to be a pivotal property of work that differentiates high-level jobs from others.

In this study, work complexity is defined by tasks that involve working with data and people in contrast to working with things (Kohn and Schooler, 1983, p. 22). Particularly in the nation's large cities, work that requires interaction with data and/or people has become one of the hallmarks of the modern postindustrial economy given its dependence on information-processing and service-rendering (e.g., Bell, 1973; Featherman and Hauser, 1978; Kasarda, 1983; Waldinger, 1986-87). From

the professions and management to clerical and sales jobs, communicative, interpersonal, and numerical skills are the primary competencies required in the performance of work.

To operationalize this variable, scores of work complexity in relation to both data and people were assigned to each of the 261 Census occupational titles in the follow-up data (the occupations refer to those held in 1984). These scores were obtained from the fourth edition of the Dictionary of Occupational Titles (DOT) (U.S. Dept. of Labor, 1977). Described in detail elsewhere (Cain and Treiman, 1981; Miller et al., 1980), the DOT is based upon ratings produced by trained occupational analysts who conducted extensive on-site observations of the task requirements of occupations, including their complexity of involvement with data and people.[2] Work with data is scored on a seven-point scale ranging from no relationship to data or simply comparing readily observable characteristics, to synthesizing information in order to develop concepts or interpretations. Work with people is scored on a nine-point scale, ranging from the simple taking of instructions to mentoring (i.e., counseling an individual with regard to problems that may be resolved by legal, clinical, or other professional principles). The work complexity measure used here was created by factor-analyzing the data and people information, using the factor scores to produce an overall work complexity index. The result is a variable with a mean of 0, a standard deviation of 1, and a range of 5.36, with a high work complexity value of 2.47 and a low value of -2.89.[3]

Despite the plausibility of the variable, we need to assess whether it is a valid indicator of the concept work complexity. The best way to do so is through the process of construct validation (Carmines and

Zeller, 1979). This entails empirically examining whether the variable behaves as if it measures work complexity as suggested by several theoretically derived hypothesis involving the concept.

Based on what is known about occupational differences in work-role demands, one would expect a valid measure of work complexity to distinguish higher- from lower-level occupations. Research by Spaeth (1979, 1984) suggests that professional and managerial work is highly complex because it typically involves the exercise of independent judgement, analytical ability, and the application of a substantial body of theoretical knowledge to solve problems, make decisions, and so forth. By contrast, lower-level occupations (clerical, sales, etc.) generally have a narrower range of task responsibilities and/or more specific cognitive demands. Therefore if the variable is a good indicator of the concept, one should find a high proportion of professional and managerial occupations in the upper range of the variable distribution, whereas lower-level occupations should be concentrated in the middle and lower range of the distribution.

Another criterion of the validity of the measure is its relation to earnings. Parcel and Mueller (1983a) document that individuals with more complex work typically earn more. Thus one would expect the variable to be positively associated with earnings.

Data to assess how well these criteria are met are presented in Tables 3.3 and 3.4. To facilitate comparisons, the complexity measure is represented as a categorical variable: high complexity corresponds to the top one-third of the variable distribution, medium complexity to the middle-third, and low complexity to the bottom-third. Table 3.3 presents the distribution of work complexity by six broad occupational

TABLE 3.3

Distribution of Work Complexity by Occupational Type[a]

Occupation	Work Complexity			
	Top-third	Middle-third	Bottom-third	Mean
Professional	67.5%	32.5%	0.0%	.978
Managerial	44.6	55.4	0.0	.491
Technical	17.5	80.4	2.1	-.144
Clerical	0.0	54.5	45.5	-1.025
Sales	0.0	100.0	0.0	-.584
Others[b]	0.0	30.6	69.4	-1.507

[a]Full-time employees in 1984 (weighted data).
[b]Operatives, laborers, craft and service workers.

TABLE 3.4

Mean Earnings by Work Complexity[a]

Work Complexity	Mean Earnings
Top-third	$30,963
Middle-third	26,058
Bottom-third	21,092

[a]Full-time employees in 1984 (weighted data).

types. As expected, professional and managerial occupations are far more likely than other occupations to have the most complex work. Sixty-eight percent of professional occupations are located in the top-third of work complexity, followed by 45 percent of managerial and 18 percent of technical occupations. The middle-third of the complexity distribution is the modal category for managerial, technical, clerical and sales occupations, while 69 percent of the "Other" occupational group (consisting of operatives, laborers, craft and service workers) are located in the bottom-third.

Table 3.4 displays mean earnings by level of complexity. The results indicate a strong positive relation between complex work and earnings and thus are consistent with what we would expect from a valid measure of the variable.

Additional evidence for validity is provided by Kohn and Schooler's assessment of their measure of job complexity. They designed a series of interview questions to determine the complexity of respondents' jobs. To assess the variable's validity they compared it to the DOT's work complexity ratings (which were published after their data were collected) and found them to be highly correlated (Kohn and Schooler, 1983, pp. 25, 67, 321-25). Given that I use the DOT to construct the work complexity variable used here, the strong association between Kohn and Schooler's job complexity measure and the DOT's ratings adds to my confidence in the validity of the variable.

Job Authority

The uppermost level of work authority is where decisions are made that affect the overall scope and direction of an organization. For

example, high-level managers make the important decisions concerning firms' investment strategies. In assessing the quality of work experience of former CUNY students who are typically in their early- to mid-thirties, it seems unrealistic to focus on access to the highest reaches of organizational authority. On the other hand it is quite conceivable that some may have obtained access to the ranks of middle management. This is where responsibilities for the day-to-day functioning of the organization lie, particularly supervising employees. Supervisory authority may entail a range of responsibilities, including organizing and monitoring other's work, conducting job performance evaluations, making decisions about pay and promotions, and hiring and firing employees.

In order to assess the distribution of authority among former CUNY students, the follow-up survey questionnaire asked whether or not the respondent:

1. Has authority to hire and fire employees.

   Yes (1) No (0)

2. Supervises the work of others.

   Yes (1) No (0)

3. Is closely supervised in his or her own work.

   Yes (0) No (1)

The first two are obvious indicators of supervisory authority, the third is more ambiguous. Its importance is suggested by the way work is structured in complex organizations. Spaeth's (1979) research on the dimensions of work in upper-echelon occupations shows an increase in autonomy as one ascends the authority hierarchy. In other words, those with more authority tend not to be closely supervised.

Following the procedure employed by Kluegel (1978) and Wolf and Fligstein (1979a) in their analyses of group differences in supervisory authority, the yes-no answers to the above questions are used to create an additive index of job authority. The assigned values for the responses to each question are presented below each question. An individual's job authority score is formed by adding together these values. The highest authority score is 3, meaning that the respondent has authority to hire and fire, supervises others work, and his or her own work is not closely supervised. The next level contains those with positive responses to any two questions (score=2); the third level includes those with a positive response to any one question (score=1); the final category consist of those with no positive answers to the three questions (score=0).[4]

Does this scale act as though it measures supervisory authority? Kluegel (1978) proposes that a valid measure of the concept should distinguish higher-level occupations from lower ones, exhibit a monotonic relationship to earnings, and have the fewest cases at the highest authority level.

Data to assess how the variable behaves relative to these criteria are displayed in Tables 3.5 and 3.6. Table 3.5 shows the distribution of authority by the six occupational types. Managers clearly exceed other occupations in authority. Forty-four percent have the highest authority scale value, whereas scale value 1 is the modal value of the other occupations. Although professionals have the second highest mean value, it is not unreasonable for them to have far less authority than managers since professional work typically involves applying expert

TABLE 3.5

Distribution of Job Authority by Occupational Type[a]

Occupation	Job Authority Score 3	2	1	0	Mean
Professional	14.9%	25.3%	36.4%	23.4%	1.32
Managerial	43.5	31.4	18.9	6.2	2.12
Technical	9.0	28.7	41.6	20.6	1.26
Clerical	4.7	16.9	41.0	37.4	.89
Sales	10.2	20.7	43.2	25.9	1.15
Others[b]	3.8	12.3	46.5	37.4	.83

[a]Full-time employees in 1984 (weighted data).
[b]Operatives, laborers, craft and service workers.

TABLE 3.6

Mean Earnings by Job Authority, and
Sample Distribution by Job Authority[a]

Authority Score	Mean Earnings	Sample Distribution
3	$35,322	18.9%
2	28,677	25.1
1	24,440	34.5
0	22,298	21.4

[a]Full-time employees in 1984 (weighted data).

knowledge to solve problems which may or may not include having administrative responsibility. The rank order of the other occupations is as one would expect.

Table 3.6 presents information to assess the remaining criteria. Earnings show a linear relationship to the scale values, so that each increment in supervisory responsibility is associated with a higher salary. The distribution of cases by authority score indicates that positions with the most authority are the most exclusive. These results are reassuring. That the variable behaves as predicted by the hypotheses suggest that it is a valid indicator of the concept.

In addition to assessing the construct validity of the job authority variable, I conducted a confirmatory factor analysis to determine if the questionnaire items used to create it do in fact form a distinct factor. The factor analysis of the items, along with several other items on work (e.g., opportunities for promotion, good fringe benefits, recognition from superiors), revealed a distinct job authority factor (orthogonal rotation; eigenvalue = 1.13).

All told, the results from these analyses are gratifying. The variables work complexity and job authority appear to be valid indicators of their respective concepts.

Explanatory Variables

As we saw in the preceding chapter, the socioeconomic attainment process is complex, involving numerous determinants. To gauge the affect of educational attainment on ethnic and gender differences in work complexity and job authority, other potential predictors need to be identified and controlled. Although the conceptual rationale for

variable inclusion is presented in chapters four and five, the variables used in this study are defined and measured as follows:

Ethnicity. Race/ethnicity is represented as a set of dummy variables for blacks, Hispanics and whites. Whites and blacks are non-Hispanic, Hispanics are those who identify themselves as of Latin origin. Approximately 90 percent of Hispanics were of Puerto Rican origin.

Female. Gender is represented as a dummy variable (female=1).

Socioeconomic origins is represented by parents' educational attainment and family income. Father's education and mother's education are dichotomies coded 1 for attended college or more. Family income on entry to CUNY is categorized into three dummy variables: less than $10,000; $10,000-14,000; $15,000 and above.

Educational attainment. Educational attainment is measured as the respondent's highest credential earned (at CUNY or other institutions) as of 1984. The credentials are as follows: high school diploma (for CUNY entrants who earned less than 15 credits and never received a college degree); some college (for those who earned 15 or more credits but never received a college degree); associate degree; bachelor's degree; master's degree; advanced or professional degree. Each level is represented as a dummy variable (degree earned=1).

Work experience prior to highest degree attainment. This indicates the number of years employed prior to earning highest degree.[5]

Work experience after highest degree attainment. This indicates the number of years employed since receiving highest degree.[6]

Public sector. Public- versus private-sector employment is represented as a dummy variable (public=1).

Union. A dummy variable of union membership versus nonmembership (union member=1).

Types of Data Analyses

To assess education's effect on work complexity and job authority among minorities and women, this study takes as its point of departure the major groups enrolled in CUNY during the initial years of its open admissions program: blacks, Hispanics and whites. Because the research focuses on differences in work qualities the analyses are restricted to those who held full-time jobs in 1984. Virtually all male workers and over 80 percent of females in the labor force were so employed. A total of 3,612 respondents to the follow-up survey fit these criteria.

The procedure to address this issue is designed to assess the association of educational attainment with the outcome variables. It has two parts. First, I provide a tabular presentation. Next, to provide an adjusted estimate of education's influence and to provide a sense of the process by which individuals get complex work and authority, I carry out multivariate analyses. The standard procedure is ordinary least squares multiple regression.

A number of details concerning the regression analyses conducted here need to be mentioned. Both standardized and unstandardized coefficients are reported to show the relative contribution of each variable and the magnitude of its effect. The standardized coefficients for the sets of dummy variables measuring ethnicity, family income, and educational attainment are represented by sheaf coefficients (Heise, 1972). Where the proportion of respondents with missing data on a variable is small (less than 5 percent), missing data are eliminated from equations

by the listwise deletion procedure. Where there are missing data in excess of five percent (for father's education, mother's education, family income and job sector), dummy variables containing those who did not respond to the relevant questionnaire items have been created. This procedure retains cases that would otherwise be deleted from the analysis, yet derives the value of the coefficients from the data-present cases only (Cohen and Cohen, 1983). Coefficients for missing-data dummy variables are not presented.

ENDNOTES

1. It is possible that other factors may have influenced the likelihood of responding to the follow-up survey, for instance being underemployed or unemployed. However because the assessment of non-response bias involved comparing the follow-up sample to the original sample, only variables common to both samples could be used. Hence labor market status could not be used since this information only exists for the follow-up sample.

2. The DOT also rates occupational complexity in relation to things. These ratings mainly pertain to setting-up and using machinery and therefore are not applicable to the overwhelmingly white-collar employment in the CUNY data. It is also worth noting that Cain and Treiman's (1981) assessment of the reliability of the DOT ratings finds that the ratings for data and people are quite reliable whereas those for things are not.

3. Because the DOT uses low scores to refer to positions with higher complexity demands, I have multiplied the complexity scores for data and people by -1 so that high scores correspond to high complexity.

4. Only respondents who answered all three questions are included in the job authority variable. Of the 3,806 respondents employed full-time in 1984, 401 are not included in the job authority scale because of missing data on one or more of the questionnaire items. This represents 10.5 percent of full-time employees.

5. Work experience before completion of highest earned degree is measured by the number of years elapsed from the year respondents' obtained their first full-time, year around job and the year their highest credential was conferred. Admittedly this measure is imprecise. It assumes continuous employment from the time of initial full-time employment through the completion of one's highest degree. Nonetheless we believe that the conceptual advantage gained from distinguishing between pre- and post-degree experience (the latter is much more valuable) outweigh whatever imprecision that may have been introduced by measuring experience in this way.

6. Work experience after completion of highest degree is measured by the number of years from the year the highest degree was earned to 1984, when the follow-up survey was administered. Strictly speaking this measures years of potential experience since we are assuming continuous employment after degree completion. Because the sample for this study are respondents working full-time in 1984--arguably an indicator of attachment to work--it is likely that the large majority were so employed.

CHAPTER 4

HIGHER EDUCATION AND ETHNIC AND GENDER DIFFERENCES IN WORK COMPLEXITY

Although little is known about the distribution of complex work, ethnic and gender inequalities undoubtedly exist in light of well documented disparities in earnings, access to promotion ladders, and occupational attainments (e.g., DiPrete and Soule, 1986; England and McCreary, 1987; Farley, 1984; Jencks et al., 1979; Rosenfeld, 1980; Spilerman, 1977). This chapter examines how educational attainment affects access to complex work among black, Hispanic, and white men and women who attended CUNY after it began its open-admissions program. The key questions are: 1) Has the education that was largely made possible by the program increased minorities' access to challenging work? 2) Do comparably educated groups obtain jobs of similar complexity, or do whites and/or males remain advantaged? Addressing these questions sheds light on whether CUNY's open-access policy succeeded in enabling students from disadvantaged backgrounds to obtain satisfying employment and thereby narrow inequities separating them from whites.

Educational Attainment and Job Complexity

Social theory and quantitative research suggests that educational attainment is positively associated with challenging work. As discussed in chapter two, functionalists, Marxists, and Weberian theorists, in their own ways, argue that America's educational system sorts students

and channels them into appropriate places in the occupational structure so that those with the most schooling acquire positions requiring high-level analytical skills, the exercise of independent judgement, and the like (e.g., Bowles and Gintis, 1976; Clark, 1962; Collins, 1979). The most direct evidence of a relationship between education and work complexity is provided by Kohn and Schooler. Their research reveals that years of education completed is the strongest predictor of the complexity of a person's first job, and is only slightly less important for subsequent jobs (Kohn and Schooler, 1983, pp. 73-81).

In this research, the attainment of complex jobs is viewed as primarily determined by educational credentials. Because postgraduate credentials (M.A., Ph.D., LL.B., etc.) are a prerequisite for employment in most professional occupations and for an increasing share of high-level managerial and administrative positions (e.g., Useem and Karabel, 1986), they undoubtedly have an important influence on obtaining jobs with challenging task demands. A bachelor's degree is frequently required for employment in many technical, middle-level managerial, and a number of professional occupations (nursing, teaching, social work, etc.). Whether an associate degree leads to complex work is less certain. The labor market value of a two-year college credential has been the subject of vigorous debate (see Dougherty, 1987, for review). Supporters of community colleges contend that an A.A. degree provides important leverage in the competition for good jobs, particularly for academically weak students. Alternatively, critics argue that A.A. recipients are primarily channeled into jobs with limited career prospects.

Table 4.1 presents the proportion of each ethnic/gender group

holding jobs in the top one-third of the work complexity distribution, with controls for educational attainment. For those who earned a college degree, educational attainment is the highest credential completed. Respondents who never obtained a degree and earned less than 15 college credits are categorized as having a high school diploma. Non-degree holders with 15 or more credits are characterized as having some college. This distinction permits comparison of an associate degree with a high school diploma knowing that the latter does not include people who may have completed comparable or even more college credits. As noted in chapter three, a difference in proportions test (Blalock, 1979) has been conducted for all pairs of interest to determine whether differences are statistically significant. In the discussion that follows differences are not referred to unless they are significant.

Overall, what stands out are the large mean differences between whites and minorities, and the absence of gender differences. Whites are nearly twice as likely to hold the most challenging jobs.

The relation between educational attainment and work complexity exhibits a threshold effect: relative to the high school diploma, the associate degree provides little or no increment in complexity. The B.A. appears to be the minimum credential necessary for entry to jobs that provide more challenging work, and seems especially important to minority chances of holding a challenging job. For instance, relative to an A.A., the B.A. is associated with roughly a sixfold increase in the proportion of Hispanic men and women doing complex work and close to a fivefold increase for black women. Among holders of graduate degrees there are further substantial increments in the proportion with the most complex jobs. For example, holders of an M.A. are generally about twice

TABLE 4.1

Percent High Work Complexity[a] by Educational Attainment, Gender and Ethnicity[b]

	Males			Females			Total
Educational Attainment:	White	Black	Hispanic	White	Black	Hispanic	
HS diploma[c]	14.0%	1.9%	10.2%	23.5%	2.2%	5.1%	11.3%
	(78)	(30)	(16)	(38)	(33)	(17)	(212)
Some College[d]	20.8	14.0	12.5	18.7	1.8	2.5	15.5
	(181)	(56)	(42)	(118)	(53)	(35)	(485)
AA degree	26.1	16.1	5.6	10.3	5.6	5.7	14.4
	(170)	(51)	(28)	(160)	(110)	(63)	(582)
BA degree	34.5	34.4	32.6	25.8	26.4	44.8	32.0
	(577)	(61)	(58)	(434)	(117)	(39)	(1286)
MA degree	64.1	66.6	63.3	67.6	75.2	72.4	66.5
	(247)	(25)	(14)	(329)	(55)	(32)	(702)
ADV-PF degree[e]	87.2	---	---	75.3	---	---	84.1
	(178)			(62)			(258)
Mean	38.5	20.5	21.4	35.7	19.3	20.9	36.3
	(1431)	(224)	(160)	(1141)	(376)	(193)	(3525)

[a] Those in the top one-third of the work complexity distribution.
[b] Percentages are weighted; frequencies are unweighted.
[c] Attended college but earned less than 15 credits.
[d] Earned 15 or more credits but no degree.
[e] Because of small Ns, minorities with advanced or professional degrees are not reported.

as likely to be doing complex work as those with a B.A.

Credential level influences the relation between ethnicity and job complexity. Ethnic disparities favoring whites are evident among those with high school diplomas, but these inequalities evaporate among holders of bachelor's and master's degrees (and are even reversed in the case of Hispanic women at the B.A. level). With educational attainment controlled, gender differences favoring males are significant among whites at the A.A., B.A. and advanced or professional degree levels. There are no gender differences among blacks and Hispanics.

In sum, work complexity appears to be more strongly related to education and ethnicity than to gender. Education appears to produce a threshold effect in two respects: a) using the high school diploma as the base, increments to work complexity emerge first at the B.A. level rather than at the A.A. level; b) attainment of a B.A. or higher degree greatly diminishes, if not eliminates, ethnic inequalities in work complexity.

Of course, variables besides education are involved in obtaining jobs with challenging work. Social origins may play a role. Persons from privileged origins are more apt than those from less advantaged backgrounds to be encouraged to pursue, and to expect, upper-level white collar employment (e.g., Bowles and Gintis, 1976; Kohn, 1969; Sabel, 1979; Willis, 1977). Even after controlling for differences in educational attainment, Hout (1984b), for example, found that men are more likely to hold positions that require self-direction if their fathers did, while men whose fathers worked in closely supervised but secure jobs tend toward jobs with the same characteristics. Similarly, a preliminary analysis of the CUNY data revealed that males from higher

income families have higher paying jobs, net of the influence of education and other pertinent variables (Lavin, Murtha, and Hyllegard, 1989). Differences in background factors may also contribute to group inequities in nonmonetary work qualities.

Employment experience has a bearing on access to high-level jobs. According to human capital theory, work experience represents an investment in work skills that enables one to perform more demanding tasks (e.g., Mincer, 1974, 1989). While undoubtedly true in general, there is reason to believe that time spent at work is not uniformly valuable. A year of employment after graduating from high school, while perhaps having a salutary effect on attitudinal traits, is not as potent in enhancing skills as a year after finishing college (e.g., Griffin, 1978). Post-degree work experience is a direct investment in one's career field. To examine the influence of work experience, I distinguish between the number of years employed before and after completing one's education, expecting that the latter has a greater impact on job complexity.

Finally, whether one is employed in the private or public sector of the labor market may affect the likelihood of engaging in challenging work. Research shows that the advent of the services-based economy has increased demand for a better educated, more highly skilled workforce (Hunter, 1988; Kasarda, 1983; Lichter, 1988), and that in the nation's major urban centers the upgrading of occupations appears especially pronounced in the private sector. In New York City, for example, the dramatic expansion of private sector business services (financial, legal, insurance, etc.) fueled the sharp growth in managerial, technical, and professional employment (U.S. Dept. of Labor, 1988; Waldinger,

1986-87). Therefore it seems likely that opportunities to obtain complex work may be greater in private than public employment. An additional reason for expecting the private sector to have higher average work complexity is that private organizations typically introduce advanced production technologies more rapidly because they are subject to greater competitive pressure to lower costs. On balance, these technologies (e.g., various computer-aided labor processes) appear to increase the cognitive demands of work (Adler, 1986; Hirschhorn, 1984; Zuboff, 1988). Considering these influences, it would not be surprising if work in the private sector were more complex than in the public.

To clarify the role of these factors, I regressed work complexity on ethnicity, gender, three measures of social orgins--father's education, mother's education, and parents' income--educational attainment, years employed before highest degree, years employed after highest degree, and public sector employment.[1] The results are shown in Table 4.2. Two models are presented: the first reproduces the unadjusted ethnic differences in work complexity (that can be calculated from Table 4.3); the second reports ethnic differences controlling for the effects of the other independent variables.

The analysis confirms that educational attainment is by far the most powerful influence on work complexity. As expected, the highest credentials are associated with the most complex work. Compared with the reference category, high school diploma, an advanced or professional degree is associated with an increase in job complexity of 2.02 (approximately two standard deviations). The increment accorded to a master's degree is nearly as large. To a lesser extent, bachelor's degree

TABLE 4.2

Determinants of Work Complexity

	(1)		(2)	
	Unstandardized	Standardized[a]	Unstandardized	Standardized
Ethnicity[b]		-.209***		-.073***
Black	-.550		-.241	
Hispanic	-.392		-.088	
Female			-.018	-.009
Father's Ed.[c]			.058	.023
Mother's Ed.			.026	.012
Parents' Income[d]				.020
LT $10,000			.030	
$10,000-14,999			.050	
Education[e]				.579***
Some college			.197	
AA Degree			.309	
BA Degree			.723	
MA Degree			1.474	
ADV-PF Degree			2.021	
Work Exp.< Degree			.006	.019
Work Exp.> Degree			.020	.076*
Public Sector			-.166	-.073***
Constant	.124		-.788	
Adj. R^2	.043		.307	
N unweighted	3,392			

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

[a] The standardized coefficients for ethnicity, parents' income, and educational attainment are sheaf coefficients, described by Heise (1972).
[b] Whites form the reference category.
[c] The reference categories for both father's and mother's education consist of those with a high school diploma or less schooling.
[d] The reference category contains those with incomes above $15,000.
[e] The reference category contains those with high school diplomas.

recipients also obtain more complex work than those whose highest degree is a high school diploma. Consistent with the finding in Table 4.1, earning an associate degree seems to do relatively little to augment job complexity. This result is in line with the critical perspective on community colleges, which holds that an A.A. essentially prepares students for low-level jobs with dim prospects for rewarding work experience (e.g., Dougherty, 1987; Karabel, 1972; Monk-Turner, 1990; Pincus, 1980, 1986). In short, a B.A. and especially a postgraduate credential dramatically improve chances of obtaining challenging work.

Labor market sector also makes a difference. Relative to the public sector, private employment is associated with more complex work. Also having an influence is post-degree work experience. The longer the time working with a degree, the greater the likelihood of attaining a position with challenging work.

Neither the family background variables nor work experience prior to degree completion are related to attaining such work. The results also indicate that women are as likely to obtain complex positions as comparable men. This is true of women in general and within each ethnic group (i.e., tests revealed no sex and ethnic group interaction effects).

This analysis adds to our understanding of ethnic inequalites in work complexity. The findings indicate that the most important source of these disparities is educational attainment. As can be seen from the group distributions on the explanatory variables in Table 4.3, blacks and Hispanics were more likely than whites either to leave college without a degree or with an associate degree. By contrast, a much greater percentage of whites hold the more valuable bachelor's, mas-

ter's, and advanced or professional degrees.

There are a number of reasons for the lower educational achievements of minorities (e.g., Lavin, Alba and Silberstein, 1981; Lavin and Crook, 1990). A factor that looms large is the weaker high school preparations of blacks and Hispanics relative to whites. Minorities more often came to CUNY from nonacademic high school tracks and they earned lower grades in the college preparatory courses that they did take. Partly as a result, they were disproportionately placed in community colleges and in vocational curricula, both of which reduced the probability of earning a bachelor's degree. Moreover, minority students were more apt to be placed in remedial courses in two- and four-colleges. This slowed down their progress in earning credits which lowered the odds of earning an undergraduate degree, and prolonged the time of those who did. On average minorities needed nearly two more years than whites to earn a B.A. degree. Ultimately, the extended time it took to complete a baccalaureate degree diminished chances of earning postgraduate credentials: time to B.A. attainment is one of the strongest predictors of graduate degree attainment.

Another factor that hurt degree chances and lengthened the time to B.A. attainment was full-time employment. Since blacks and Hispanics tended to come from poor families (Table 4.3), they often needed to work full-time while pursuing their studies. Specifically, 35 percent of blacks, 32 percent of Hispanics, but only 15 percent of whites reported full-time employment while attending college. Hence it seems that social origins have a lingering influence on attaining complex work by diminishing educational attainments, though father's and mother's education and income have no direct role in the process of acquiring

TABLE 4.3

Means and Standard Deviations (below) for the Dependent and Independent Variables by Gender and Ethnicity

	Males			Females			Total		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
Work Complexity	.112	-.426	-.292	.143	-.425	-.245	.124	-.425	-.268
	1.000	.989	.908	.909	1.066	.955	.965	1.033	.931
Female	-	-	-	-	-	-	.396	.571	.508
							.489	.495	.501
Father's Ed	.273	.197	.129	.333	.160	.148	.297	.176	.139
% > HS Grad	.446	.399	.337	.472	.367	.356	.457	.381	.346
Mother's Ed	.174	.207	.113	.234	.150	.075	.198	.175	.094
% > HS Grad	.380	.407	.318	.424	.358	.264	.399	.380	.292
Family Income:									
LT 10,000	.341	.600	.619	.304	.622	.677	.326	.612	.649
	.474	.491	.487	.460	.486	.469	.469	.488	.478
10-14,999	.363	.188	.224	.347	.163	.106	.356	.173	.164
	.481	.392	.419	.476	.370	.309	.479	.379	.371
HS Diploma	.102	.207	.135	.062	.148	.156	.086	.174	.146
	.302	.406	.343	.241	.356	.364	.280	.379	.353
Some College	.182	.308	.353	.156	.192	.241	.172	.242	.296
	.386	.463	.480	.363	.395	.429	.377	.429	.457

TABLE 4.3 (Continued)

Means and Standard Deviations (below) for the Dependent and Independent Variables by Gender and Ethnicity

	Males			Females			Total		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
AA Degree	.113	.194	.114	.131	.259	.294	.120	.231	.206
	.316	.397	.319	.338	.439	.457	.325	.422	.405
BA Degree	.366	.209	.317	.350	.258	.175	.360	.237	.245
	.482	.408	.467	.477	.438	.381	.480	.426	.431
MA Degree	.139	.078	.072	.256	.117	.114	.185	.101	.093
	.346	.269	.259	.437	.323	.319	.388	.301	.291
ADV-PF Degree	.099	.003	.008	.045	.025	.021	.077	.015	.015
	.298	.052	.092	.207	.156	.143	.267	.123	.120
Work Experience	1.735	1.955	2.337	2.043	2.603	2.079	1.857	2.325	2.206
Before Degree	3.134	3.553	3.830	3.365	4.110	3.500	3.230	3.890	3.662
Work Experience	8.333	9.392	8.933	7.749	8.264	8.900	8.102	8.748	8.916
After Degree	3.630	3.805	4.253	3.706	4.030	3.965	3.671	3.970	4.102
Public Sector	.265	.361	.326	.210	.341	.275	.243	.349	.300
	.441	.481	.471	.407	.475	.448	.429	.477	.459
N unweighted	1,386	210	153	1,108	349	186	2,494	559	339

such work. In effect, disadvantages associated with poor secondary school performance and impoverished social origins reduce degree chances which, in turn, make it difficult to gain access to complex jobs.

The lower educational attainments of minorities also accounts for their tendency to have more post-degree work experience than whites. That is, leaving college without a degree or with an A.A. allows one more time to work with a degree (diploma) in hand than someone who earns a B.A. or higher credential. Since post-schooling work experience is positively associated with job complexity, Hispanics and blacks gain an advantage from their additional experience which partly offsets the negative effects of other variables. But it must be emphasized that this offset is due to lower educational standing and therefore is actually an indicator of social disadvantage: while minority individuals were in the workforce, whites more often remained in school pursuing higher degrees. Moreover the benefit that minorities accrue from their lengthier work experience is tiny compared to staying in college and earning a B.A. or higher degree. For example, the approximate one year edge in post-degree experience that Hispanics have on whites, all else equal, produces a .020 increment in work complexity, whereas a B.A. is associated with a .723 boost vis-a-vis a high school diploma.[2]

Besides educational attainment, the other factor that contributes to blacks' and Hispanics' typically lower job complexity is their disproportionate employment in the public sector where work tends to be less challenging. Better than one in three blacks and nearly as many Hispanics are public sector employees, as compared with one in four whites.

All told, these variables add considerably to understanding the sources of ethnic differences in work complexity. Even with these

controls, however, differences favoring whites remain.

Public/Private Sector Differences in Obtaining Complex Work

As we have seen, obtaining complex work mainly depends on educational credentials, and much is known about why minorities have lower degree attainments than whites. But also playing a role is labor market placement: public-sector employment is associated with less complex work net of the effect of ethnicity, gender, educational attainment, and both types of work experience. For this reason and because the public sector is so important for minority employment, the public/private dimension needs more exploration.

Discussed in some detail in chapter two, research on labor markets has demonstrated that the sectoral placement of workers affects a number of employment rewards, including earnings, job security, working conditions, and fringe benefits. Despite these findings, the public/private spilt has been largely overlooked since most research has focused on the differences between monopoly and competitive industries. The few studies that include the public sector have found that it typically offers disadvantaged groups greater opportunity for success than the private sector, in part because public employers have more aggressively sought to reduce employment related discrimination (Farley, 1984; Kaufman and Daymont, 1981; Kaufman, 1986). Not only has it provided blacks and women with employment opportunities but also occupational mobility into professional, technical and administrative positions, and more equitable earnings (Carnoy and Levin, 1985; Collins, 1983; DiPrete, 1987; Farley, 1984; Hodson, 1978; Hout, 1984a; Sokoloff, 1980; Wilson, 1980). These findings suggest that the process of attaining complex

jobs may be more equitable in the public sector, thereby improving the chances of minorities and women to gain access to these positions.

To examine this issue, separate regression equations for public- and private-sector employees are presented in Tables 4.4 and 4.5.[3] (Because the social origins variables did not contribute to explained variance in the equation presented in Table 4.2, nor in preliminary analyses of public and private sector equations, they have been omitted from these models.)

The results show clear contrasts in the process by which individuals gain access to complex work. In the public sector (Table 4.4), initial ethnic differences (model 1) disappear in the full model, and educational attainment exerts considerable influence on the attainment of jobs with challenging work. The process of obtaining complex work appears quite different in the private sector (Table 4.5). Although educational attainment is the most influential determinant, its role is smaller than in public employment. Ethnicity continues (model 2) to be a factor affecting work complexity: whites are advantaged relative to minorities with comparable education.

That ethnic inequalities persist in the private sector when differences in educational attainment and other characteristics are controlled suggests that it is less meritocratic than the public. This at least implies that these inequities may be due to discriminatory processes (cf. Kaufman and Daymont, 1981; Waldinger, 1986-87, p. 390). Possibly there were employer preferences to hire and/or promote whites into higher-level jobs. Though we lack the data to know whether this happened, we did ask respondents whether they believed they had ever been victims of discrimination in promotions or hirings. In both sectors

TABLE 4.4

Determinants of Work Complexity for Public Sector Workers

	(1)		(2)	
	Unstandardized	Standardized[a]	Unstandardized	Standardized
Ethnicity[b]		-.150***		-.039
Black	-.407		-.112	
Hispanic	-.275		-.004	
Female			.287	.127***
Education[c]				.671***
Some college			.170	
AA Degree			.371	
BA Degree			.844	
MA Degree			1.834	
ADV-PF Degree			2.346	
Work Exp.< Degree			.013	.042
Work Exp.> Degree			.024	.084
Constant	.069		-1.247	
Adj. R^2	.020		.440	
N unweighted	897			

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

[a] The standardized coefficients for ethnicity and educational attainment are sheaf coefficients, described by Heise (1972).
[b] Whites form the reference category.
[c] The reference category contains those with high school diplomas.

TABLE 4.5

Determinants of Work Complexity for Private Sector Workers

	(1)		(2)	
	Unstandardized	Standardized[a]	Unstandardized	Standardized
Ethnicity[b]		-.221***		-.125***
Black	-.586		-.354	
Hispanic	-.380		-.147	
Female			-.118	-.064**
Education[c]				.481***
Some college			.195	
AA Degree			.242	
BA Degree			.601	
MA Degree			1.038	
ADV-PF Degree			1.827	
Work Exp.< Degree			.003	.009
Work Exp.> Degree			.013	.050
Constant	.132		.494	
Adj. R^2	.048		.246	
N unweighted	2,063			

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

[a] The standardized coefficients for ethnicity and educational attainment are sheaf coefficients, described by Heise (1972).
[b] Whites form the reference category.
[c] The reference category contains those with high school diplomas.

blacks and Hispanics were more likely than whites to report discrimination. However these differences were much larger among private-sector employees. For example, among respondents employed in the public sector at the time they were surveyed, blacks were 19 percent more likely than whites to indicate discrimination in promotions, whereas among those in the private sector they were 37 percent more likely. The comparable figures for Hispanics are 8 percent versus 19 percent.[4] These results lend support to the analyses in Tables 4.4 and 4.5 indicating that access to jobs with challenging work is more equitable in the public than the private sector.

Tables 4.4 and 4.5 also reveal an important gender contrast in work complexity: relative to comparable males, females have more complex work in the public sector; in the private sector they have less. I believe the source of this difference is to be found in sex differences in college major and occupational attainments. The relation between gender-typed college majors and subsequent occupational attainments has frequently been identified as contributing to the sex segregation of occupations (e.g., Angle and Wissmann, 1981; Daymont and Andrisani, 1984; England and McCreary, 1987; Jacobs, 1989; Marini and Brinton, 1984; Mickelson, 1989). In part because of sex differences in socialization and experiences in schools (e.g., curricular placement and counseling practices that steer females away from math and science courses), females often aspire to, and are overrepresented in the so-called helping professions--teaching, social work, nursing, etc.--which are mainly located in the public sector.

To explore whether college major may be related to gender differences in occupations in the public and private sectors, Table 4.6

displays degree recipients' major field of study by sex and ethnicity. It shows clear gender contrasts and, with the exception of minorities' greater likelihood of majoring in health and social services, little or no ethnic differences. Males are overrepresented in business and natural sciences/engineering/math. Taken together, approximately four men in ten majored in these fields, whereas less than two women in ten did. By contrast, females hold a disproportionate share of degrees in education or in health and social services. These fields represent about 44 percent of their degree majors but only 16 percent of males'. In the remaining fields sex differences are relatively small, with only the social sciences exhibiting more than a five percent differential.

Largely consistent with national data (cf. National Education Association, 1988, pp. 10-13) and the studies cited above, these results suggest that the fields pursued by women channel them into public employment in social-service professions. By the same token, the fields pursued by men, especially business and engineering, would seem to be linked to upper-level private-sector employment. Inspection of the occupations held by women and men in the two job sectors supports this hypothesis. Fully 30 percent of publicly employed women are school-teachers, whose work is particularly complex in relation to people. Another 13 percent hold other public-sector professional positions (as librarians, social workers, and the like) that typically involve complex work. In this sector, males are found in less complex semiprofessional and technical occupations, for instance as police officers, correction officers and firemen. In the private sector, on the other hand, males are nearly three times as likely as females to occupy the most complex, higher-level managerial positions (21 percent to 8 per-

TABLE 4.6

Degree Recipients' Major Field of Study by Gender and Ethnicity[a]

	Males	Females	Whites	Minorities[b]
Arts & Humanities	12.0%	13.4%	12.7%	12.5%
Business	21.9	10.8	17.2	15.6
Education	7.2	22.1	13.7	14.8
Health & Social Services[c]	9.2	21.7	13.3	21.0
Natural Sciences, Engineering, Math[d]	17.9	6.9	13.3	11.3
Social Sciences	17.2	11.3	15.4	10.9
High Professional[e]	7.1	2.0	5.8	.8
Secretarial Studies[f]	.1	4.0	1.3	4.2
No field reported	7.3	7.8	7.2	9.0
N unweighted	1,563	1,439	2,215	687

[a] Percentages are based on the field in which respondents' earned their highest degree (AA, BA, MA, advanced, or professional). All percentages are for full-time workers in 1984.
[b] Blacks and Hispanics have been combined to form this category.
[c] Health sciences, social work, law enforcement, and the like.
[d] Includes architecture.
[e] Medicine, law, and similar high-level professional degrees.
[f] Only refers to an associate level degree.

cent). They also hold an edge in professional employment, while most clerical jobs are held by women.

In effect, gender differences in attaining complex jobs derive from the way sex-segregated occupations are distributed over public and private sectors. Females obtain challenging work in the public sector because the professional positions traditionally occupied by women are in education and other services provided by the state (e.g., Carnoy and Levin, 1985; Collins, 1983; Sokoloff, 1980). Therefore it is not that women are somehow unfairly advantaged in public employment, but rather, this is where upper-level positions consistent with their sex-typed occupational preferences are concentrated. Even though they have made gains in occupations traditionally dominated by men (e.g., England and McCreary, 1987; Jacobs, 1989), the pattern of employment seen in the CUNY data is very common. Indeed, national and New York State Census data indicate that females are disproportionately employed in public sector professional occupations whereas males are overrepresented in managerial employment in the private sector (U.S. Bureau of the Census, 1984, Table 279; 1983, Table 220).

Discussion

These analyses indicate that educational attainment is a key determinant of access to jobs that involve complex work. Its effect does not operate in a simple linear fashion, however. A bachelor's degree is the threshold that must be crossed to enhance chances for positions with challenging work, while earning a graduate degree dramatically increases opportunity for such work. That an associate degree appears to do little more than a high school diploma to augment work complexity

implies that the critical view of community colleges as providing limited access to more rewarding jobs may be an accurate assessment (e.g., Dougherty, 1987; Karabel, 1972; Monk-Turner, 1990; Pincus, 1980, 1986).

The existence of an educational threshold at the B.A. level suggests that insofar as minorities were able to earn this, or especially higher credentials, they fared well in the quest for intrinsically rewarding work. As can be seen by aggregating B.A. and graduate degrees in Table 4.3, a sizeable proportion of black (35 percent) and Hispanic (35 percent) students earned B.A.'s and higher level credentials. Most of these degrees were awarded to students who would not have been admitted to CUNY were it not for the open-admissions policy. Indeed, the program approximately tripled the number of bachelor's and postgraduate degrees received by blacks, and about doubled the number of each going to Hispanics (Lavin and Crook, 1990). In effect, then, many took good advantage of the opportunity to improve their educational achievements and consequently were well positioned to compete for desirable jobs.

Nonetheless, mainly because of the lingering influences of past educational and economic disadvantages, most minority students did not attain the level of education typically needed to gain access to jobs with intrinsically challenging work. The majority either left college without any degree or earned an associate degree. In contrast, most whites earned bachelor's and graduate degrees (62 percent). These differences in educational attainment in large measure explain white-minority disparities in the attainment of jobs with complex work.

But even if the educational attainments of minorities had equalled those of whites, ethnic disparities would remain. The sources of these

differences are to be found in the private-sector labor market where whites are more likely to obtain complex jobs than comparably qualified blacks and Hispanics. And though the process of attaining complex work is equitable in the public sector, private sector inequalities have a greater impact since most jobs are located there and work tends to be more complex. Whatever the labor market dynamics may be, discrimination seems partly involved. Certainly our data on respondents' perceptions of unfair treatment support this view.

Overall in the labor market, similarly credentialled men and women occupy jobs of equivalent complexity. But when public and private sectors are viewed separately the pattern of job complexity varies dramatically. Women tend to fare better in the public sector where they are often employed as teachers and in other social-service professions. Men are advantaged in the private where they are more likely to be in higher management. This pattern of occupational attainment undoubtedly stems from the relationship between gender-linked college majors and employment in sex-segregated occupations, so that upper-level positions typically held by women are concentrated in the public sector. Though we have no data on this, it is also possible that women have limited access to higher-level managerial positions because of discriminatory practices by employers (cf., Kanter, 1977; Wolf and Fligstein, 1977b).

In sum, largely because whites' credential attainments exceed minorities' they have greater success obtaining challenging work. Yet for the sizable percentage of black and Hispanic students who were able to persist in the face of long odds and earn bachelor's and postgraduate degrees, access to complex work was within their reach. But for many others the burden of past educational and economic disadvantaged proved

too difficult to acquire these credentials which, in turn, put them in poor position to compete for good jobs. Private-sector labor market processes favoring whites over equally qualified minorities imposed an additional constraint on their chances for high-level employment. In contrast to the key role played by differences in educational attainment in explaining ethnic inequalities, the relationship between gender and job complexity appears to depend on the way males and females select or are funnelled into sex-segregated occupations, and the way these occupations are distributed by employment sector.

ENDNOTES

1. Because the response categories for father's and mother's occupation were not uniform across the three cohorts of CUNY entrants these data are not usable, and therefore cannot be included as social origins variables.

2. This comparison may be somewhat exaggerated in that the small payoff to work experience is partially a function of measuring work complexity in relation to occupations instead of specific jobs. For instance, a newly hired clerical supervisor has the same complexity score as one who has longer employment tenure and has been given more responsibilities. If complexity scores were constructed from extensive data on specific jobs, work experience would probably be more influential. Since educational credentials are generally required for high-level positions, it is nonetheless doubtful that measuring work complexity in this way would substantially alter the pattern of results reported in Table 4.2.

3. Because of missing data on employment sector, the combined number of cases of these regressions is less than the aggregate regression reported in Table 4.2.

4. The sector pattern of ethnic differences for discrimination in hiring is similar.

CHAPTER 5

HIGHER EDUCATION AND ETHNIC AND GENDER DIFFERENCES IN JOB AUTHORITY

Although there are numerous jobs that involve complex work and the exercise of authority, these characteristics of work are conceptually distinct. Whereas work complexity refers to the degree of cognitive difficulty inherent in task situations and is most prominently exemplified by the professions, job authority implies rank in a hierarchically organized workplace, such as the many large private firms and public agencies in New York City. The primary responsibility of those with authority is to plan, manage, and monitor the work of others. As members of the managerial staff they must be knowledgeable about organizational rules and procedures, and are expected to use judgment and discretion in solving problems, making decisions, and the like. Because they are ultimately responsible for the performance of their organizational unit they are compensated with higher salaries. Moreover, those who perform well are likely to move up the ranks into positions with greater pay, status, and power (e.g., Caplow, 1983; Hall, 1972; Zuboff, 1988).

This chapter examines the role of educational attainment in improving the prospects of minorities and women to obtain jobs with supervisory authority. Its goal is to further our understanding of the quality of work life among black and Hispanic men and women who, for the most part, would not have gone to college were it not for the open-admissions

policy. As in the previous chapter, the analysis is designed to see whether education increases access to a valued dimension of work, and to determine if similarly educated groups hold comparable positions. Examining these issues provides further insight into the effect of open-access higher education in enabling students from disadvantaged backgrounds to obtain satisfying employment and thereby narrow inequities separating them from whites.

A Perspective on the Attainment of Job Authority

Theory and research suggests that the job attainment process for managerial positions is complex, involving a variety of determinants. For one, it is likely that the relationship of education to job authority is somewhat weaker than it is for work complexity. This is because there is less reliance on credentials for managerial than professional employment. For example, national data show that the median educational attainment of managers and administrators in 1983 was 14.9 years compared to 16.8 years for professionals, though both substantially exceed other occupations (U.S. Dept. of Labor, 1984). Moreover, even though functionalist, neo-Marxist, and neo-Weberian theorists argue that education is positively related to attaining high-level jobs, they disagree on how this is accomplished and what role other variables play in the process. As discussed in chapter two, functionalism most strongly stresses the link between the skill dimension of work and the need for numerical, communicative, and interpersonal capabilities to successfully perform in an increasingly word oriented, information intensive work environment. Educational training essentially imparts these skills and thus is the key to occupational destinations (e.g.,

Bell, 1973; Clark, 1962). In contrast to this emphasis on meritocratic sorting, neo-Marxists argue that individuals from upper-class origins are much more apt to hold managerial titles than are similarly qualified peers from less advantaged backgrounds. A direct effect of socioeconomic origins on upper-echelon managerial incumbency is reported by Useem and Karabel (1986) and is also documented in a number of studies of job authority attainment (e.g., Kerckhoff et al., 1982; Robinson and Kelley, 1979; Wright and Perrone, 1977). The neo-Weberian perspective of Collins (e.g., 1971, 1979) views occupational inequalities as resulting not from a class dynamic whose objective is maintenance of capitalist social relations but rather competition among groups (defined, for example, by class, race, ethnicity, religion and gender) with unequal abilities to acquire and monopolize society's most rewarded positions. Taken together these perspectives suggest that educational attainment, socioeconomic origins, ethnicity, and gender may affect access to managerial employment.

In addition to these variables, there is reason to believe that work experience is an influential determinant of administrative responsibility. Studies of individual and organizational characteristics associated with managerial careers indicate that education is often more instrumental in getting hired, while moving up the ranks into positions with greater responsibility and influence tends to be based on organizational tenure (e.g., Caplow, 1983; Kanter, 1977; also see Bills, 1988, for a more general discussion of this process).

Given their contrasting societal roles, it is also likely that the private sector affords greater opportunity for work authority than the public. Whereas the primary responsibility of the public sector is the

provision of social services, the private sector is organized around the profitable production and marketing of goods and services (e.g., O'Conner, 1973). By force of competitive pressure to minimize labor costs and maximize production, private organizations tend to rely more heavily on supervisory personnel to coordinate and monitor work, implying that there is more opportunity for work of this kind (cf., Gordon et al., 1982; Goldman and Tickamyer, 1984; Lever-Tracy 1984). This argument is supported by national and New York State 1980 census data showing that managerial occupations constitute a larger proportion of private- than public-sector employment (U.S. Bureau of the Census, 1984, Table 279; 1983, Table 220). This would also seem to be true in New York City where private-sector managerial employment grew sharply during the 1980s as the city added thousands of jobs in finance, law, insurance, and other business services (Stafford, 1985: 107; U.S. Dept. of Labor, 1988; Waldinger, 1986-87).

Another variable that deserves attention is labor-union membership. As numerous commentators have observed, unions have conceded to management the right to run the enterprise in exchange for higher wages, fringe benefits and job protections for their members (e.g., Aronowitz, 1973; Freeman and Medoff, 1984; Jacoby; 1985; Piore, 1974). And while unions do negotiate work-rules to protect workers from abuses, higher-level supervisory functions (hiring and firing, access to confidential information, etc.) remain the prerogative of management and are the main criterion for excluding an employee from a collective bargaining unit. Hence it is probable that union membership diminishes work authority. Empirical evidence for this is the substantial negative correlation between unionization and authority reported in Kluegel's (1978) study.

In summary, acquiring managerial responsibility is undoubtedly influenced by a number of factors. In addition to educational credentials, other potential determinants include: socioeconomic origins, ethnicity, gender, years of work experience, private- versus public-sector employment, and nonunion versus union membership.[1]

The Attainment of Job Authority

To measure the distribution of authority among the former CUNY students the 1984 follow-up survey asked respondents if they supervise the work of others, have authority to hire and fire employees, and whether their work is not closely supervised. A job authority scale ranging from a low of 0 to a high of 3 was created by adding the number of positive responses to these questions (see Chapter 3). The relationship of education to job authority is examined in two steps. First, differences in authority according to educational attainment, gender, and ethnicity are described. Next, to provide an adjusted estimate of education's influence and to provide a sense of the process by which individuals obtain authority, multiple regression analysis is used.

Table 5.1 presents the proportion of those with high work authority as represented by a job authority scale value of 2 or 3.[2] The most visible finding concerns ethnicity. Without exception whites are more likely to hold jobs high in authority: about half of white men and women occupy such positions whereas in no category of minorities does the proportion exceed one-third. Even when one compares whites and minorities comparable in education, differences in job authority remain. In some cases they are reduced in magnitude but disparities typically persist.

TABLE 5.1

Percent High Job Authority[a] by Educational Attainment, Gender and Ethnicity[b]

	Males			Females			Total
Educational Attainment:	White	Black	Hispanic	White	Black	Hispanic	
HS diploma[c]	38.9%	20.9%	24.9%	38.7%	4.8%	38.7%	31.7%
	(69)	(27)	(15)	(33)	(31)	(16)	(191)
Some College[d]	42.5	25.3	29.8	56.2	37.7	19.4	41.6
	(164)	(49)	(40)	(108)	(46)	(31)	(438)
AA degree	44.8	39.4	26.2	41.9	30.3	24.0	38.8
	(153)	(46)	(25)	(144)	(95)	(55)	(518)
BA degree	50.2	34.1	45.7	50.9	34.6	36.1	48.3
	(545)	(58)	(50)	(398)	(109)	(34)	(1194)
MA degree	52.3	31.5	33.3	41.0	24.8	22.5	43.6
	(230)	(22)	(13)	(304)	(51)	(27)	(647)
ADV-PF degree[e]	64.7	---	---	60.6	---	---	62.6
	(167)			(59)			(245)
Mean	48.9	29.4	33.6	47.8	28.5	28.7	44.3
	(1328)	(204)	(145)	(1046)	(340)	(170)	(3233)

[a] Those with a job authority score of 2 or 3.
[b] Percentages are weighted; frequencies are unweighted.
[c] Attended college but earned less than 15 credits.
[d] Attended college and earned 15 or more credits but did not earn a degree.
[e] Because of small Ns, minorities with advanced or professional degrees are not reported

As the table shows there are no overall gender differences. However this finding is not consistent within each level of educational attainment. At the M.A., for example, females are about 10 percent less likely than their male co-ethnists to have high job authority. In all likelihood this is because women are overrepresented in applied-professional jobs such as teaching, counseling, social work, and nursing where administrative authority is generally low (54 percent of women versus 28 percent of men with M.A.s hold such jobs) (cf., Grimm and Stern, 1974; Strober, 1984). By contrast, a surprisingly high proportion of white and black women who completed at least one semester of college but did not earn a degree (designated in the table as "some college") hold positions of authority. Why this is is not entirely clear. Perhaps they left college to take advantage of good job opportunities and over time acquired various supervisory responsibilities.

The relationship between education and this dimension of work is inconsistent. While credentials appear on balance to improve opportunity for job authority, there is not a linear relationship between the two (see Total column). Most notable is that employees with some college are essentially just as apt to wield authority as A.A. and M.A. holders. In part this is due to the type of jobs held by women with M.A.s. But the weakness of the association is also attributable to the crudity of the measure of job authority itself. In spite of its construct validity (see Chapter 3) and ability to distinguish whites and minorities, it does not capture all facets of authority. For example, a manager of a local hardware store can easily score as high on the authority scale as a vice president of a large firm or a director of a public agency, despite the strong likelihhod that the latter have many

more subordinates under their jurisdiction and far broader range of responsibilities. Incumbents of these and similar positions are almost always required to have a college credential (e.g., Collins, 1979; Useem and Karabel, 1986; Zuboff, 1988) whereas it is quite conceivable that positions typified by the former example may be filled solely on the basis of relevant work experience.

In order to clarify education's role, and to gain a better idea of the sources of ethnic disparities, other variables that affect how these jobs are obtained need to be controlled. This is done in Table 5.2, which presents the results of a regression analysis (the dependent variable is the full job authority scale, not just the high range). Two models are shown: the first reports the unadjusted ethnic differences in authority; the second reports ethnic differences controlling for gender, educational attainment, years employed before highest degree, years employed after highest degree, public-sector employment, and union membership.[3] Since preliminary analyses revealed that the socioeconomic background variables, parental education and family income, do not affect this aspect of work they have been omitted from the equation. In addition, tests for gender interaction effects were not significant and therefore separate equations for males and females are not warranted.

This analysis does clarify the somewhat inconsistent findings reported in Table 5.1. It indicates that education is important, but so are the other variables. With these variables controlled educational attainment exhibits a linear relationship to job authority (although the slight M.A. advantage relative to the B.A. is not statistically significant). Compared with the reference category, high school diploma, an advanced or professional degree produces the largest increase in author-

TABLE 5.2

Determinants of Job Authority

	(1)		(2)	
	Unstandardized	Standardized[a]	Unstandardized	Standardized
Ethnicity[b]		-.189***		-.110***
Black	-.499		-.271	
Hispanic	-.414		-.272	
Female			-.072	-.035*
Education[c]				.158***
Some college			.153	
AA Degree			.180	
BA Degree			.347	
MA Degree			.355	
ADV-PF Degree			.708	
Work Exp.< Degree			.029	.097***
Work Exp.> Degree			.044	.160***
Public Sector			-.251	-.107***
Union			-.655	-.298***
Constant	1.532		1.122	
Adj. R^2	.035		.178	
N unweighted	3,114			

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

[a] The standardized coefficients for ethnicity and educational attainment are sheaf coefficients, described by Heise (1972).
[b] Whites form the reference category.
[c] The reference category contains those with high school diplomas.

ity. Holders of M.A.'s and B.A.'s obtain about half the boost of the most educated employees, but considerably more than lesser educated ones. And an A.A. provides a small edge over a high school diploma. However unlike Table 5.1, the increment to some college vis-a-vis a high school graduate is not significant. This implies that the favorable authority chances of employees at this education level in the earlier table are explained by other characteristics, such as the lengthier work experience that often results from spending less time in school.

Each year of work experience before and after completion of schooling increases the likelihood of acquiring job authority, with post-degree experience the more valuable of the two. As anticipated, employment sector makes an important difference: workers in the public sector, who are equal in all the other ways controlled by the analysis, have less authority than their private sector counterparts. Similarly, union members are far less apt than nonmembers to exercise supervisory responsibility.

Males have slightly more authority than comparable females. Because the means on the independent variables are similar for men and women, I suspect that this advantage, like that for complex work, is rooted in gender differences in degree majors and occupational attainments--namely, that men more often earn business degrees and gain employment in management whereas women are overrepresented in education and social service curricula which place them in non-supervisory jobs.

Like the results without controls for education in Table 5.1, model 1 reveals substantial ethnic differences in job authority in favor of whites. Model 2 goes far in explaining these inequalities. Partly they are attributable to minorities' greater likelihood of union membership

which strongly diminishes work authority (51 percent of blacks, 40 percent of Hispanics, but only 29 percent of whites are unionized workers). Of course, blacks' and Hispanics' lower educational achievements also limit their access to managerial positions. The overrepresentation of minorities in the public sector comprises another key source of ethnic difference in acquiring authority.

On the other hand, because blacks and Hispanics have more work experience before and after completion of schooling than whites (mainly caused by their lower educational attainments and therefore greater number of years in the labor force instead of school), these variables partly offset the negative effects of the other factors. However their approximate half year advantage in work experience prior to finishing school and the nearly one year advantage in post-degree work experience hardly compensates for lower degree attainments. For example, comparisons of the unstandardized coefficients indicate that it would take nearly eight years of post-degree work experience for a worker with a high school diploma to match the authority level of his or her peer with a bachelor's degree, all else equal. So although work experience does help one advance in the authority hierarchy, the benefit going to minorities from additional time in the labor force is small relative to persisting in college and acquiring a B.A. or higher credential. In a sense, the characteristics associated with lower educational attainments--poor secondary school performance and limited economic resources that necessitate full-time employment while in college--have a lingering impact on life chances: by depressing educational achievements they limit opportunity for rewarding work.

All told, these variables add considerably to understanding the

sources of ethnic differences in job authority. Nevertheless inequities favoring whites persist even after they are taken into account.

Public/Private Sector Differences in Obtaining Job Authority

Based on the previous analysis of public and private sector differences in the attainment of complex work, it is possible that the process of acquiring authority also differs by sector. Apart from the striking findings for work complexity, the evidence that job authority on average is lower in the public sector and that minorities are far more likely than whites to work there suggest that the public/private dimension needs further examination.

As discussed in chapter four, public-sector employers have exhibited a greater willingness to employ minorities and women in administrative, technical and professional positions, and to pay them more fairly than have those in the private sector (Carnoy and Levin, 1985; Collins, 1983; DiPrete, 1987; Farley, 1984; Hout, 1984a; Sokoloff, 1980; Wilson, 1980). This implies that job authority may be allocated more equitably in the public sector, thus improving the prospects of minorities and women. To explore this issue, separate regression equations for public- and private-sector workers are presented in Tables 5.3 and 5.4.[4]

In the public sector (Table 5.3), initial ethnic differences evaporate with controls. What determines whether an employee has authority--regardless of their ethnicity, gender, education, and work experience--is union membership, which dramatically limits access to such work. In line with the research cited above, this finding implies that minorities and women are not unfairly excluded from this sector's authority ranks.

TABLE 5.3

Determinants of Job Authority for Public Sector Workers

	(1)		(2)	
	Unstandardized	Standardized[a]	Unstandardized	Standardized
Ethnicity[b]		-.138***		-.085
Black	-.318		-.197	
Hispanic	-.201		-.118	
Female			.013	.007
Education[c]				.087
Some college			-.096	
AA Degree			-.040	
BA Degree			.061	
MA Degree			-.138	
ADV-PF Degree			-.002	
Work Exp.< Degree			.004	.016
Work Exp.> Degree			-.010	-.044
Union			-.658	-.328***
Constant	1.066		-1.602	
Adj. R^2	.017		.130	
N unweighted	828			

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

[a] The standardized coefficients for ethnicity and educational attainment are sheaf coefficients, described by Heise (1972).
[b] Whites form the reference category.
[c] The reference category contains those with high school diplomas.

TABLE 5.4

Determinants of Job Authority for Private Sector Workers

	(1)		(2)	
	Unstandardized	Standardized[a]	Unstandardized	Standardized
Ethnicity[b]		-.197***		-.141***
Black	-.568		-.399	
Hispanic	-.447		-.334	
Female			-.132	-.063*
Education[c]				.228***
Some college			.236	
AA Degree			.270	
BA Degree			.461	
MA Degree			.554	
ADV-PF Degree			1.066	
Work Exp.< Degree			.039	.118***
Work Exp.> Degree			.072	.249***
Union			-.703	-.245***
Constant	1.726		.797	
Adj. R^2	.038		.124	
N unweighted	1,881			

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

[a] The standardized coefficients for ethnicity and educational attainment are sheaf coefficients, described by Heise (1972).
[b] Whites form the reference category.
[c] The reference category contains those with high school diplomas.

But why does unionization have such an overwhelming influence while educational attainment has no effect, especially since research shows that higher education is generally required for administrative employment (e.g., Collins, 1979; Useem and Karabel, 1986; Zuboff, 1988)? The union variable is so important because it pinpoints differences in managerial employment: one in four nonunion employee versus less than one in ten of their unionized counterparts falls into the broad census occupational category "managers and administrators." But on the other hand, the unionized segment of the public sector does contain a large share of highly educated professional and semiprofessional employees who generally do not supervise other workers (e.g., social workers, teachers, health care professionals, etc.). Consequently credentials appear to be unrelated to authority because there is little variance in the educational attainments of supervisory and non-supervisory employees. In other words, the expected effect of education is masked by the offsetting influence of non-supervisory workers with comparable schooling.[5]

The attainment process is quite different in the private sector (Table 5.4). Each step-up in educational credentials, and each year of work experience before and after completion of schooling increase authority; belonging to a labor union has a negative influence. Despite the substantial role played by these variables as indicated by the size of their standardized coefficients, group differences persist: whites have more authority than otherwise equivalent blacks and Hispanics; males are favored over comparable females.

These ethnic inequalities lend support to the argument in the previous chapter that discriminatory processes in favor of whites may be

operating in the private sector. The CUNY data on perceived discrimination in hirings and promotions, which show minority-white differences to be much larger in the private than public sector, are consistent with this interpretation. Particularly in contrast to the public sector where the allocation of high-quality jobs is independent of ethnic group membership, the advantage accorded whites in the private labor market suggests unfair treatment.

The reason women have less authority than men in the private sector is probably due to gender differences in occupational aspirations and with the way occupations are distributed in the public and private sectors. As described in chapter four, females are far more apt than males to choose fields of study that prepare one for jobs in the so-called helping professions--teaching, nursing, social work, and the like. Since education, health care, and social services are for the most part public-sector services, this is where women who aspire to high-level occupations tend to gain employment. Males, on the other hand, more often earned degrees in business and as a result they hold a greater share of high-level private-sector managerial positions (21 percent of males versus 8 percent of females hold such jobs). Of course discrimination in the private sector may also limit women's access to authority positions. Yet in contrast to research suggesting that the private sector is less equitable than the public (Kaufman and Daymont, 1981; Kaufman, 1986), our data reveal that women in the private sector are only slightly more likely than those in the public to perceive that they have been discriminated against.

Discussion

On the whole these analyses indicate that college credentials enhance opportunity for job authority. Not surprisingly recipients of advanced and professional degrees have the most success gaining access to authority positions. To a lesser extent holders of master's and bachelor's degrees also fare well, whereas an associate degree appears at best to produce only a small increase in authority. In effect, the B.A. is the minimum credential for entry into the higher strata of the authority hierarchy. This finding is consistent with the critics of community colleges who argue that a two-year degree has relatively limited job market value (e.g., Brint and Karabel, 1989; Dougherty, 1987; Monk-Turner, 1990; Pincus, 1980, 1986) and with the way credentials are related to work complexity.

These results suggest that the sizeable proportions of blacks and Hispanics who received B.A.'s or higher credentials (35 percent of both groups) were well positioned to enter the ranks of supervisors and managers. Since most of these degrees were awarded to students who had little or no chance to attend college were it not for CUNY's open-admissions program, the policy succeeded in promoting access to jobs that not only involved managing the work of others but in many instances probably also entailed contributing ideas and suggestions concerning workplace problems, procedures, and the like. In other words, the policy helped to provide access to arenas where important organizational decisions are made.

Notwithstanding these achievements, whites were almost twice as likely to earn bachelor's and graduate degrees which partly explains why they have greater authority. But as we have seen there are a number of

other reasons for blacks' and Hispanics' lower authority. One is their overrepresentation in unionized jobs which sharply depress chances for positions with administrative responsibilities. Another is their higher rate of public-sector employment, where the proportion of supervisory positions is lower than the private. And though these positions are open to all groups, there simply are not that many opportunities to obtain them. Lastly, they are disadvantaged relative to similarly qualified whites in the private sector, which far outweighs the equitable treatment in the public sector since this is where most jobs with authority are located.

Not only are there ethnic disparities in the private sector but ones based on gender as well. While the former appear to be at least partly based on discriminatory employment practices, the latter seem to unfold from gender-typed college majors and employment in sex-segregated occupations. Whether the outcome of institutional processes in schools that push females toward social service curricula, a belief that the odds are stacked against women in the corporate world, or for other reasons, the major fields typically selected by women tend to disqualify them for high-level administrative responsibility in the private sector. And even though women hold jobs of higher average complexity than men in the public sector this does not carry over into an advantage in authority. Undoubtedly this is because many of these women are employed in professional fields such as counseling, nursing and teaching, where administrative authority tends to be low (cf., Grimm and Stern, 1974; Strober, 1984). In effect, gender-linked occupational preferences produce substantial sex inequality: whereas professional and managerial routes of occupational mobility are available to men, certain profes-

sions have traditionally been and apparently still are the primary avenue open to women.

In summary, the educational opportunity created by the open-admissions policy made it possible for large numbers of disadvantaged blacks and Hispanics to earn bachelor's and postgraduate degrees. Without them chances for high-level employment would have been very slim. Indeed, students who only earned an associate degree met with little success in the competition for intrinsically engaging work. And while minorities are well ahead of where they otherwise would have been, it is partly because they did not go as far in college as their white peers that they obtained jobs with lower average authority. Labor market dynamics also contributed to whites' advantage, especially the apparent discrimination faced by minorities in the private sector. The relationship between gender and work qualities appears to depend on the persistence of sex-typed occupational aspirations and employment in sex-segregated occupations.

ENDNOTES

1. Because there is evidence that whites are more likely to have social ties and networks that facilitate a successful job search than blacks (Jaynes and Williams, 1989: 319-323), I had thought that this advantage may also give them an edge in obtaining positions with supervisory responsibility. This hypothesis is not supported by the data however. There is no difference in authority associated with obtaining work through: 1) friends or relatives, 2) an acquaintance, business colleague, or other "weak ties," or 3) an employment agency or other institutional source. Consequently ethnic disparities in job authority cannot be influenced by differences in job networks.

2. To determine whether differences in the table are statistically significant, a difference in proportions test (Blalock, 1979) has been conducted for all pairs of interest.

3. Except for job authority and union membership the descriptive statistics for the variables in this analysis are presented in Table 4.3. The means and standard deviations (below) for job authority (A) and union (U) by gender and ethnicity are as follows:

	Males			Females		
	Whites	Blacks	Hispanics	Whites	Blacks	Hispanics
A	1.545	1.042	1.179	1.512	1.027	1.056
	1.052	.948	.984	1.011	.897	.902
U	.321	.495	.426	.239	.517	.378
	.467	.501	.496	.427	.501	.487

The values for ethnicity alone are:

	Whites	Blacks	Hispanics
A	1.532	1.033	1.118
	1.036	.919	.944
U	.289	.507	.402
	.453	.501	.491

4. Because of missing data on employment sector, the combined number of cases in these regressions is less than the aggregate regression reported in Table 5.2.

5. For purposes of comparison I transformed the educational attainment variable into a scale ranging from 0 to 5 (high school diploma=0; some college=1; AA=2; BA=3; MA=4; advanced/professional=5). The mean educational attainment of unionized workers in the public sector is 2.4, nearly the same as their nonunionized counterparts, 2.9. Differences

in education are even smaller among union and nonunion members in the three high status occupational categories--the professions, management and administration, and technical and related workers.

CHAPTER 6

INTERPRETATIONS AND CONCLUSIONS

By examining the effect of education on access to jobs with complex work and supervisory authority, this study has aimed to broaden the scope of stratification and mobility research. Its other major objective has been to assess whether the City University of New York's open-admissions policy succeeded in enabling disadvantaged minorities attain jobs with these qualities, thereby fostering equity. In short, it has attempted to expand the horizons of stratification research while also evaluating what arguably has been the nation's most ambitious higher education opportunity policy.

This chapter discusses how our findings contribute to the understanding of education's impact on occupational inequalities. Specifically, it summarizes why minorities have less education than whites and how this influences prospects and experiences in the job market and the workplace. It concludes by describing the successes and limitations of CUNY's open-admissions policy in achieving its bottom line goal of improving the quality of work life of disadvantaged minorities.

Principle Findings and Implications for Social Stratification Research

This study has five principle findings: (1) Whites typically have more complex work and supervisory authority than blacks and Hispanics;

(2) In large measure these differences are attributable to ethnic differences in educational attainment; (3) There is not a continuous or linear relationship between education and these work qualities. On the contrary, the B.A. is the critical threshold that needs to be crossed to gain access to jobs involving such work; (4) The process of attaining intrinsically demanding work is less meritocratic in the private sector of the economy than the public; (5) Gender differences in job quality stem from the way sex-typed college majors perpetuate sex-segregated occupational attainments, and from the way these occupations are distributed in the public and private sectors.

These findings are in some ways consistent with earlier research, but in other ways they take us further by highlighting some of the key components of the processes that underlie ethnic and gender inequities and by suggesting some fruitful lines for additional study.

What we have seen is a process whereby minorities' underrepresentation in high-quality jobs results from the cumulation of educational and economic disadvantages.[1] As discussed in chapter four, blacks and Hispanics were more likely than whites to be placed in nonacademic high school tracks resulting in less exposure to college preparatory course work, and they earned lower grades in the college preparatory courses they did take. These inequalities in high school academic preparation were compounded in college: minorities were more apt to apply to community colleges and to prefer placement in vocational curricula, both of which diminished the odds of receiving a B.A. Whatever their level of placement, their weak academic preparation hurt their college grades and thus their graduation chances. Minorities were also disproportionately placed in remedial courses in two- and four-year colleges which slowed

down progress in accumulating credits, prolonging the time to graduation. In addition, because their economic resources were often meager, a sizable portion of black and Hispanic students needed to work full-time in college which depressed B.A. chances and also lengthened the time spent in school. For those who overcame these disadvantages and earned a B.A., the extended time it took to do so--an average of two years longer than whites--made it less likely that they would pursue a postgraduate degree.

Because of this series of hurdles, minorities often left college without any degree or with an A.A. Overall, approximately two-thirds of blacks and Hispanics never went beyond the associate level. In stark contrast, virtually the same percentage of whites earned B.A.'s and higher degrees. This disparity largely accounts for whites' advantage in work complexity and job authority.

Not only were minorities more likely to work full-time during college, but such work did little if anything to improve prospects for good jobs, especially when compared to the leverage provided by post-degree work experience. Thus in addition to negatively influencing educational attainment, it did not count as much of an investment in work experience either. And while blacks and Hispanics were holding down jobs that provided money to make-ends-meet, but little else, whites were progressing at a faster pace toward degree completion. This further illustrates how early disadvantages become magnified later: among degree recipients, whites typically have more post-degree work experience than minorities.

Also contributing to minorities' disadvantaged status is their underrepresentation in positions with administrative responsibility and

complex work in the private sector. These discrepancies persist even after differences in educational attainment, pre- and post-degree work experience, and other characteristics are controlled. Though we cannot know for certain, this implies that private-sector employers use race and ethnicity to distinguish otherwise comparably qualified candidates for high-level work, with the consequence that inequalities are reinforced. And while our findings concur with research suggesting that occupational opportunities are distributed more equitably in the public sector (e.g., Collins, 1983; DiPrete, 1987; Hout, 1984a), the advantage of better treatment must be weighed against the reality that public employment generally offers fewer opportunities for challenging work, managerial authority, and, as reported elsewhere, considerably lower earnings (Lavin, Murtha, and Hyllegard, 1989). In any case, even if the job characteristics in the two sectors were the same, meritocratic processes in one cannot offset unfair competition in the other.

In sum, the cumulative force of poor secondary schooling, impoverished economic circumstances, and prolonged undergraduate tenure that typified the situation of minorities more than whites, imposed a stiff handicap on B.A. attainment that, in turn, made it very difficult to gain access to high-quality jobs. But even if the educational attainments of minorities had equalled those of whites, ethnic inequalities would remain. The sources of these disparities are to be found in the employment sector.

Gender is another area that our findings address. What was disclosed is a pattern of gender-linked college majors and subsequent occupational attainments that limit women's chances for the best rewarded positions. Undoubtedly because education, health, and the

social services are where high-level occupations traditionally have been available to women, many females earned degrees in these fields and obtained employment as teachers, social workers, nurses, therapists, and so forth. As we have seen, work in these areas is often challenging but entails little if any administrative power. Males, on the other hand, are far more apt to major in business, engineering, and mathematics, which allowed then to claim a disproportionate share of upper-level private-sector positions in management and the professions.

These differences point to the continuing significance of gender-typed definitions of appropriate career aspirations. The product of various societal and institutional influences, such as curricular placement and academic counseling that steer females away from math and science courses as well as peer group pressure not to pursue a "sex deviant" course of study, these processes perpetuate sex-segregated occupational attainments. And though females have made gains in male dominated occupations (e.g., England and McCreary, 1987; Jacobs, 1989), normative beliefs about women's place in the work world still effectively constrain their career options. Adding to this is the sectoral distribution of occupations such that the upper-level jobs held by women are concentrated in the less rewarded public sector.

Taken together, our findings have various implications for theory and research in social stratification. The threshold effect at the B.A. and the process by which good jobs are obtained highlight some aspects of the three macro-theories of education and stratification. These outcomes appear to conform more readily to the neo-Weberian and, to a lesser extent, the neo-Marxist perspectives than the functionalist one. If access to job complexity and authority were a consequence of cogni-

tive skills learned in college, as implied by functionalist theory, than one would expect educational achievement to exhibit a linear relation to them. Yet we found that there is hardly any difference in these characteristics among workers with only a high school diploma, some college, or an associate degree. That the B.A. is essentially a prerequisite for such work suggests that Collins' (1971, 1979) Weberian argument may be closer to the truth--namely that employers use credentials to certify the acquisition of attitudes and values, interpersonal skills, and personality traits such as ambition, motivation and self-confidence, rather than of technical training or job-specific expertise. It must be acknowledged that this conclusion can be advanced only extremely tentatively since we have not been able to distinguish between the cognitive and symbolic effects of credentials.

That ethnic differences in work complexity and authority persist despite controls for education and work experience also calls into question the functionalist view that occupational attainment is based on the matching of able and motivated individuals with high-level positions. The study's results also present some problems for the neo-Marxist analysis of education and life chances. Neither in the labor market overall nor in the public or private sectors do the socioeconomic origin variables affect the distribution of complex work or authority. This means that high parental SES does not directly confer an advantage in obtaining jobs with these attributes. (Of course another plausible explanation for this result is the relatively small variance in the socioeconomic origins of students who attend City University--most are from families with modest resources, even though whites are better off than minorities.) In contrast, Collins' theory that the quest for

higher education and good jobs is an expression of status group competition that favors socially dominant groups is consistent with our results showing that the advantages that whites carried with them from high school to CUNY made it easier for them to excel in college and acquire B.A.'s and higher credentials that opened doors to high-level employment. The preferential treatment accorded to whites in the private sector vis-a-vis minorities with equal qualifications further added to their privileged position.

On the other hand, the findings do support the view advanced by neo-Marxist as well as neo-Weberian theorists (e.g., Bowles and Gintis, 1976; Brint and Karabel, 1989; Dougherty, 1987) that community colleges tend to preserve rather than lessen labor market inequities. We document that A.A. holders on the whole obtain inferior jobs when compared to otherwise similar B.A. recipients. This finding is comparable to those reported in studies of occupational status and earnings (Breneman and Nelson, 1981; Monk-Turner, 1990; Pincus, 1980, 1986), but it takes us further by demonstrating that an associate degree does little to enhance access to two critical dimensions of the occupational structure: the upper-tiers of the authority and skill hierarchies.

All told our analyses suggest a number of areas where further research is needed to better our understanding of occupational inequalities. At the very least more attention needs to be paid to the relative value of credentials when analyzing labor market outcomes.[2] A much needed study would be to examine how the careers of A.A. recipients unfold over time. This could help settle the controversy raised by the critics of community colleges who base their claim that two-year degrees lead to dead-end jobs on labor market outcomes at single time intervals

(cf., Karabel, 1986).

Another topic addressed by our results is the possibility that the applied-professional master's degree programs that disproportionately enroll women--education, social work, counseling-therapy, nursing, and the like (U.S. Bureau of the Census, 1987, Table 3)--have labor market consequences similar to those that critics attribute to the associate degree. Obviously these programs provide training for higher-level positions than the more technically oriented A.A. ones, but because they have such a strong vocational emphasis it may be that they track individuals into career slots with fairly limited areas of expertise that are not amenable to occupational advancement. This appears to be what happened to many of the women in the CUNY sample with M.A.s: they were channeled into public-sector jobs that provided challenging work but little administrative responsibility. Though I know of no research on this issue I believe it may be a fruitful line of inquiry. For instance, are women with M.A.s in nationally representative samples also overrepresented in the public sector? And if this is so, what are their job mobility experiences and prospects?

Also deserving far more attention is the public/private dimension of the labor market. The dual economy theory of monopoly and competitive industries from which the concept of a segmented labor market is derived is clearly outdated. Perhaps one reason why interest in labor markets has waned a bit in the past few years is because much of the research focused on blue-collar workers in monopoly and competitive industries. The transition to a postindustrial service economy along with the growing importance of public-sector employment overall and especially among minorities (e.g., Wilson, 1980: 99-103) implies that the public/

private split is a key labor market distinction. In this regard an important research topic would be to explore why minorities are overrepresented in the public sector. Has the experience of unfair treatment in the private sector caused minority individuals to move to the public sector, or are there other reasons why they prefer it to the private sphere? In addition, what are the rates and determinants of cross-sector mobility among ethnic and gender groups, and to what extent are these moves associated with better jobs?

Implications of Findings for the Open-Admissions Policy

Educational opportunity programs have been an important component of policy efforts to reduce socioeconomic inequalities. As one of the nation's leading initiatives, CUNY's open-admissions program dramatically increased access to higher education among economically and educationally disadvantaged blacks and Hispanics in New York City. Ultimately it was hoped that the policy would provide a gateway to high quality jobs and narrow disparities separating minority and white communities.

The successes and limitations of the policy in meeting this goal are closely tied to how far students climbed the educational ladder. Overall, the educational attainment of minorities were substantially boosted. Indeed, Lavin and Crook (1990: table 12) estimate that of the roughly 14,000 blacks who entered CUNY as first-time freshmen in 1970-1972, 7,759, or 56 percent earned a degree of some kind. Among Hispanics, 5,272 students earned a credential, or 57 percent of the approximately 9,500 who enrolled. But as our analyses make clear the critical threshold for good jobs is the bachelor's degree. Based on

those working full-time in 1984, 35 percent of both blacks and Hispanics reached or surpassed this threshold (see Table 4.3). Most of these degrees--approximately 70 percent of black's and about half of Hispanic's--were awarded to students who would not have gone to college but for the policy. These are the individuals who benefitted the most from the policy and who unquestionably held better jobs than they would have if it never existed.

That many blacks and Hispanics from disadvantaged backgrounds took good advantage of the opportunity created by the program and acquired B.A.'s and higher credentials that provided access to upper-echelon jobs must be counted as an important and lasting contribution of the policy. Indeed, because professional, skilled technical, and managerial jobs are often connected to career ladders it is reasonable to expect future advancement into positions with even greater nonmonetary and monetary benefits. Moreover, our analyses no doubt understate open admissions' role, since they are limited to the first three cohorts who entered CUNY after the initiative began. If the thousands of minority graduates from subsequent freshmen classes were taken into account, one can sense that the policy had a profound influence in helping to build a critical mass of minority men and women in the higher levels of New York's occupational hierarchy.

Yet in spite of these accomplishments, a higher proportion of whites received any degree (73 percent of 76,000 entrants) and they were far more apt to earn bachelor's and postgraduate credentials (62 percent of full-time workers). As we have said, this difference tells much of the story of ethnic disparities in high quality jobs. Also playing a role is the apparent discrimination faced by minorities in private-sector

organizations.

These results give a mixed picture of the efficacy of open admissions in advancing equity. A considerable share of blacks and Hispanics used the opportunity provided by the program to good effect and went far in college and in the world of work. However despite the policy's explicit objective of enhancing baccalaureate chances, most minorities either left college without any credential or with an associate degree. As described above, this was primarily due to the cumulative impact of poor academic preparation and impoverished socioeconomic circumstances that open-admissions, even with its extensive compensatory education programs, counseling, and related services was not totally able to overcome.

All in all, this study testifies to both the contributions of a policy such as open admissions and the limitations imposed by the larger institutional fabric. The policy enabled many to earn higher educational credentials, and thus reap some of the workplace benefits of education. But on the other hand, open admissions could not erase the effects of past disadvantage on educational attainment, and labor market conditions created new disadvantages for minorities.

ENDNOTES

1. The concept of cumulative disadvantage has also been used in the research on educational outcomes of CUNY's open admissions policy (Lavin, Alba, and Silberstein, 1981; Lavin, Murtha, Kaufman, and Hyllegard, 1986; Lavin and Crook, 1990) and in a study of the influence of education on earnings (Lavin, Murtha, and Hyllegard, 1989). Examples of other studies of education and socioeconomic achievement that use this concept include, Jacobs (1989), McCelland (1990), and Useem and Karabel (1986).

2. Because researchers have mainly been interested in education's influence relative to other factors, they typically represent education by a single variable--the number of years of schooling completed.

APPENDIX

Survey of College Outcomes questionnaire (reduced to 75 percent of its original scale).

The City University of New York

Office of Institutional Research and Analysis

535 East 80 Street, New York, N.Y. 10021
212/794-5464

PLEASE READ THIS LETTER IF YOU HAVE EVER GONE TO CUNY

To former students of City University:

The City University of New York needs your help in an important survey of students who entered CUNY in 1970, 1971, or 1972. We are trying to find out if going to college—regardless of how long they go—helps people get ahead. Does college make a difference? Every one of you, whatever your current situation—be it taking care of family, working, or not working—can help us to know. In addition, the information from this study will be used to plan the program needs of CUNY students in the 1980's.

Because it is not possible to contact every 1970-72 student, this important study depends on the people who receive this questionnaire. Your help is truly important and is greatly appreciated. Please fill out the questionnaire even if you are not a graduate, or graduated from a non-CUNY college.

Your responses will be confidential and the information you provide will only be used for statistical purposes. The attached mailing label is used only for verification and our internal record-keeping purposes.

Please complete this questionnaire as soon as possible and return it to us in the enclosed postage-paid envelope. If you would like a summary of the results of this study, check the box below. Many thanks for your cooperation.

Sincerely,

David E. Lavin, Professor

Check this box if you would like a summary of the results. ☐

If this questionnaire was sent to the wrong address, would you please indicate your correct address below:

(Street Address)

(City, State, Zip Code)

Survey of College Outcomes

The first three questions ask you about your educational background and activities.

1. Which of the following degrees have you earned, when did you earn each, what was your major field of study, and what was the name of the institution where you received the degree? (Check as many degrees as you have earned)

	Check if Earned	Year Earned	Field of Study	Name of Institution
[21] High School Diploma	☐	19___	▬	▬
[27] Associate's Degree	☐	19___	_____	_____
[36] Bachelor's Degree	☐	19___	_____	_____
[45] Master's Degree	☐	19___	_____	_____
[54] Doctoral Degree (Ph.D., Ed.D., etc.)	☐	19___	_____	_____
[63] Professional Degree (M.D., D.S.W., LL.B., etc.)	☐	19___	_____	_____
[72] Other Degree(s) (please specify):_____	☐	19___	_____	_____

2. *[81]* **After completing your most recent degree, have you ever enrolled in school for further study?**

1☐ No► PLEASE GO TO QUESTION 4
2☐ Yes

3. If yes, what was the name(s) of the institution(s) you attended, how many semesters did you complete, and what was your field(s) of study? (List most recent first)

	Name of Institution	No. of Semesters Completed	Last Year of Attendance	Field of Study
[82]	_____	_____	19___	_____
[92]	_____	_____	19___	_____
[102]	_____	_____	19___	_____

Questions 4 through 17 are designed to give us a picture of your work experiences. Please answer them as accurately as you can.

4. *[112]* **During the time you were an undergraduate, were you employed?**

1☐ No
2☐ Yes, mostly part-time
3☐ Yes, mostly full-time
4☐ Combination of full- and part-time employment
5☐ Worked only occasionally

5. *[113]* **In what year did you get your first full-time job, not including summer employment? (If you have never had a full-time job, check here ☐.)**

[114-115] Year of first full-time job: 19_____

[116-118] What was your job title?:

_____

6. Since 1970 how many years have you been employed and how long have you been with your current or most recent employer?

[119-120] Number of years employed since 1970:_____
[121-122] Years with current or most recent employer:____

7. Which one of the following best describes your current employment status, and which one best describes your employment status in 1978?

Employment Status	Current *[123]*	1978 *[124]*
Working full-time	1☐	1☐
Working part-time by choice	2☐	2☐
Working part-time, but looking for a full-time job	3☐	3☐
Not working but looking for work	4☐	4☐
Not working—attending school	5☐	5☐
Not working & not looking	6☐	6☐
Not working—taking care of family responsibilities	7☐	7☐
Not working—disabled	8☐	8☐

8. *[125]* **What is your current job title, your salary, and in what kind of business or organization do you work? If not currently working, please report this information for your last job. (If you have never worked for pay, check here ☐ and go to question 17.)**

[126-128] Job title: _____
(e.g., bank teller, social worker, policeman, nurse, salesperson, lawyer, etc.)

[129-134] Yearly salary before taxes: $_____

[135-137] Name or type of organization: _____

(e.g., bank, department store, local government, hospital, self employed, etc.)

9. *[138]* **What was your job title, salary and the type of business or organization in which you worked in 1978? (If you were not working in 1978, check here ☐ and go to question 10.)**

[139-141] 1978 job title: _____

[142-147] 1978 yearly salary before taxes: $_____

[148-150] Name or type of organization in which you worked in 1978 _____

10. **Of the following items which was the single most important one in helping you get the job you held in 1978, and which one was most important in helping you to get your current or most recent job? (If not working at either period, please check where indicated.)**

(check the most important item in each column)	*[151-152]* 1978 Job	*[153-154]* Current or Most Recent Job
Not working	1☐	1☐
A close friend	2☐	2☐
A relative	3☐	3☐
A business colleague	4☐	4☐
An acquaintance	5☐	5☐
An employment agency or job service	6☐	6☐
A faculty member	7☐	7☐
An advertisement	8☐	8☐
A college placement office	9☐	9☐
Applied on my own	10☐	10☐
Other (please specify)	11☐	11☐

_____ _____

11. **Not counting the time when you were in school, have you ever:**

		1 Yes	2 No
[155]	Been laid off	☐	☐
[156]	Collected unemployment benefits	☐	☐

12. *[157]* **Have you ever had to stop working or cut down your job hours to take care of children?**

1☐ No, never ▶ PLEASE GO TO QUESTION 14
2☐ Yes

13. *[158]* **If yes, have child care responsibilities hurt your work opportunities?**

1☐ Yes, a great deal
2☐ Yes, somewhat
3☐ No, hasn't hurt work opportunities
4☐ No, I'm not pursuing work opportunities

14. **The following items describe features of people's jobs. Please indicate whether each is true for your current or most recent job.**

		True for my job 1	Not true for my job 2	Not sure 3
[159]	I have good fringe benefits	☐	☐	☐
[160]	I get promoted regularly	☐	☐	☐
[161]	I have job security	☐	☐	☐
[162]	I belong to a labor union	☐	☐	☐
[163]	There are opportunities for promotion	☐	☐	☐
[164]	I supervise the work of others	☐	☐	☐
[165]	My salary is satisfactory	☐	☐	☐
[166]	My job is interesting and challenging	☐	☐	☐
[167]	I have authority to hire and fire employees	☐	☐	☐
[168]	My work is closely supervised	☐	☐	☐
[169]	I get recognition from superiors for good work	☐	☐	☐
[170]	I get respect from family and friends for the job I hold	☐	☐	☐

15. *[171]* **Over the next five years, which one of the following best expresses how you think you will stand in terms of your work life?**

1☐ I will be doing much better than I am now
2☐ I will be doing somewhat better than I am now
3☐ I will be doing about as well as I am now
4☐ I will be doing less well than I am now

16. **The items below present various opinions about jobs and work. Please indicate your agreement or disagreement with each.**

	Strongly Agree 1	Agree 2	Disagree 3	Strongly Disagree 4
[172] I would be willing to relocate for a better job, even if it meant moving away from relatives and friends	☐	☐	☐	☐
[173] Becoming a success in a job is a matter of hard work, luck has little or nothing to do with it	☐	☐	☐	☐
[174] I'm self-confident about my abilities to succeed in work	☐	☐	☐	☐
[175] In work, nothing is more important than job security	☐	☐	☐	☐
[176] The salary a job pays is much more important than whether the work is interesting	☐	☐	☐	☐
[177] I prefer a job that demands my initiative	☐	☐	☐	☐
[178] It is important to me to be very successful in life	☐	☐	☐	☐
[179] I prefer a job where I don't have to bring work responsibilities home with me	☐	☐	☐	☐

17. **Do you believe that you have ever been a victim of discrimination because of your race, sex, or religion in any of the following employment related areas?**

		Yes, Definitely 1	Probably 2	Not Sure 3	No 4
[180]	In getting hired	☐	☐	☐	☐
[181]	Pay scale and raises	☐	☐	☐	☐
[182]	Promotions	☐	☐	☐	☐
[183]	Firings/layoffs	☐	☐	☐	☐

18. [184] **Your current marital status:**

1☐ Never married
2☐ Separated
3☐ Divorced
4☐ Widowed
5☐ Married

→ PLEASE GO TO QUESTION 22

19. [185] **If married, is your spouse currently employed? (check one):**

1☐ Working full-time
2☐ Working part-time
3☐ Not working

20. [186 188] **Spouse's current or last job title:**

_____

21. [189-194] **Spouse's current or last yearly salary before taxes: $**_____

22. [195] **How many dependent children are now living with you?**

1☐ None
2☐ One
3☐ Two
4☐ Three
5☐ Four
6☐ Five or more

23. [196] **Are you now receiving any form of public assistance (e.g., AFDC, housing subsidy, food stamps, etc.)**

1☐ Yes
2☐ No

24. [197] **Have you been in the armed forces?**

1☐ No
2☐ Yes—for how many years?_____
[198-199]

25. **Some of the following statements may be true for you and some of them may not be true for you. If a statement is true for you, check "True." If it is not true for you, check under "False." Check "Don't Know" only if you absolutely cannot decide whether a statement is true or false for you.**

		True 1	False 2	Don't Know 3
[200]	Generally, I'm confident that when I make plans, I'll be able to carry them out	☐	☐	☐
[201]	I don't spend much time keeping up with current political events	☐	☐	☐
[202]	What you get out of life is mostly a matter of luck	☐	☐	☐
[203]	In the last year I visited an art museum or gallery	☐	☐	☐
[204]	I read the newspaper almost every day	☐	☐	☐
[205]	Generally, I take a positive attitude toward myself	☐	☐	☐
[206]	I am registered to vote	☐	☐	☐
[207]	I enjoy thinking out complicated problems	☐	☐	☐
[208]	I often watch documentaries and public affairs programs on television	☐	☐	☐
[209]	Getting a good job depends mainly on being in the right place at the right time	☐	☐	☐
[210]	I am the sort of person who takes life as it comes	☐	☐	☐
[211]	I often feel downcast and dejected	☐	☐	☐
[212]	Since college, I have gotten to know many different kinds of people	☐	☐	☐
[213]	I often feel powerless to get what I want out of life	☐	☐	☐
[214]	I like to try my wits in solving puzzles	☐	☐	☐
[215]	Most of my close friends are the ones I had as a teenager	☐	☐	☐
[216]	I have had a major illness within the past two years	☐	☐	☐
[217]	In the last year I have read novels, short stories, plays, or poems	☐	☐	☐
[218]	My views about life are much different from those of my parents	☐	☐	☐

26. **Overall, how satisfied are you with each of the following areas of your life?**

		Very Satisfied 1	Somewhat Satisfied 2	Not Satisfied 3
[219]	Your work situation	☐	☐	☐
[220]	Income	☐	☐	☐
[221]	Family life	☐	☐	☐
[222]	Social life	☐	☐	☐
[223]	Amount of time for leisure activities	☐	☐	☐
[224]	Your health	☐	☐	☐
[225]	Quality of leisure time activities	☐	☐	☐
[226]	Your home or apartment	☐	☐	☐
[227]	Neighborhood in which you live	☐	☐	☐
[228]	Schools in your community	☐	☐	☐
[229]	City or town in which you live	☐	☐	☐
[230]	Your future prospects	☐	☐	☐
[231]	Life in general	☐	☐	☐

Thank You For Your Help.

Please put the Questionnaire in the return envelope (no postage needed) and mail it as soon as possible.

BIBLIOGRAPHY

Acker, Joan R
1980 "Women and Stratification: A Review of Recent Literature." Contemporary Sociology 9:25-39.

Adler, Paul
1986 "Technology and Us." Socialist Review 16:67-96.

Alba, Richard D. and David E. Lavin
1981 "Community Colleges and Tracking in Higher Education." Sociology of Education 54:223-47.

Alexander, Karl L. and Bruce K. Eckland
1974 "Sex Differences in the Educational Attainment Process." American Sociological Review 39:688-82.

Angle, John and David A. Wissmann
1981 "Gender, College Major, and Earnings." Sociology of Education 54:25-33.

Aronowitz, Stanley
1973 False Promises: The Shaping of American Working Class Consciousness. New York: McGraw-Hill.

Baron James N.
1984 "Organizational Perspectives on Stratification." Annual Review of Sociology 10:37-69.

Baron, James N. and William T. Bielby
1980 "Bringing the Firms Back In: Stratification, Segmentation, and the Organization of Work." American Sociological Review 45: 737-765.

Beck, E.M., Patrick M. Horan, and Charles M. Tolbert II
1978 "Stratification in a Dual Economy: A Sectoral Model of Earnings Determination." American Sociological Review 43:704-720.

Beck, E.M., Patrick M. Horan, and Charles M. Tolbert II
1980 "Industrial Segmentation and Labor Market Discrimination." Social Problems 28:113-130.

Bell, Daniel
1973 The Coming of Post-Industrial Society: A Venture in Social Forecasting. New York: Basic Books.

Berg, Ivar
1971 Education and Jobs: The Great Training Robbery. Boston: Beacon Press.

Berk, Richard
1983 "An Introduction to Sample Selection Bias in Sociological Data." American Sociological Review 48:386-398.

Bills, David B.
1988 "Educational Credentials and Promotions: Does Schooling do more than get you in the Door?" Sociology of Education 61:52-60.

Blalock, Hurbert M.
1979 Social Statistics: Revised Second Edition. New York: McGraw-Hill.

Blau, Peter M. and Otis D. Duncan
1967 The American Occupational Structure. New York: Wiley.

Bottomore, Thomas, B.
1966 Classes in Modern Society. New York: Random House.

Bottomore, Thomas, B.
1971 Sociology: A Guide to Problems and Literature. Second Edition. New York: Random House.

Bowen, Howard R.
1977 Investment In Learning: The Individual and Social Value of Higher Education. San Francisco: Jossey-Bass.

Bowles, Samuel and Herbert Gintis
1976 Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life. New York: Basic Books.

Breneman, David and Susan Nelson
1981 Financing Community Colleges. Washingtion, DC: Brookings Institution.

Brint, Steven and Jerome Karabel
1989 The Diverted Dream: Community Colleges an the Promise of Educational Opportunity in America, 1900-1985. New York: Oxford.

Burawoy, Michael
1977 "Social Structure, Homogenization and the Process of Status Attainment in the United States and Great Britain." American Journal of Sociology 82:1031-1042.

Burawoy, Micheal
1982 "Introduction: The Resurgence of Marxism in American Sociology." American Journal of Sociology 88:1-30.

Cain, Pamela S. and Donald J. Treiman
1981 "The 'Dictionary of Occupational Titles' As A Source of Occupational Data." American Sociological Review 46:253-278.

Caplow, Theodore
1983 Managing an Organization. New York: Holt, Rinehart, and Winston.

Carmines, Edward G. and Richard A. Zeller
1979 Reliability and Validity Assesssment. Newbury Park, CA: Sage.

Carnoy, Martin and Henry M. Levin
1985 Schooling and Work in the Democratic State. Stanford: Stanford University Press.

Clark, Burton R
1962 Educating The Expert Society. San Francisco: Chandler Publishing Company.

Cohen, Jacob and Patricia Cohen
1983 Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences. Hillsdale, NJ: Lawrence Erlbaum Associates.

Colclough, Glenna and Patrick M. Horan
1983 "The Status Attainment Paradigm: An Application of a Kuhnian Perspective." The Sociological Quarterly 24:25-42.

Coleman, Richard P. and Lee Rainwater
1978 Social Standing in America: New Dimensions of Class. New York: Basic Books.

Collins, Randall
1971 "Functional and Conflict Theories of Educational Stratification." Reprinted in Jerome Karabel and A.H. Halsey (eds). Power and Ideology in Education. New York: Oxford University Press, 1977.

Collins, Randall
1976 Book review: Schooling in Capitalist America, by Samuel Bowles and Herbert Gintis. Harvard Educational Review 46:246-251.

Collins, Randall
1979 The Credential Society: An Historical Sociology of Education and Stratification. New York: Academic Press.

Collins, Sharon
1983 "The Making of the Black Middle Class." Social Problems 30:369-81.

Coser, Lewis A.
1975 "Presidential Address: Two Methods in Search of Substance." American Sociological Review 40:691-700.

Crompton, Rosemary and John Gubbay
1977 Economy and Class Structure. New York: St. Martins Press.

Coxon, A.P.M. and C.L. Jones
1975 "Introduction" Social Mobility: Selected Readings. Middlesex, England: Penguin.

Davis, Mike
1986 Prisoners of the American Dream. London: Verso.

Daymont, Thomas N. and Paul L. Andrisani
1984 "Job Preferences, College Major, and the Gender Gap in Earnings." The Journal of Human Resources 19:408-103.

DiPrete, Thomas A.
1987 "The Professionalization of Administration and Equal Employment Opportunity in the U.S. Federal Government." American Journal of Sociology 93:119-140.

DiPrete, Thomas A. and Whitman T Soule
1986 "The Organization of Career Lines: Equal Employment Opportunity and Status Advancement in a Federal Bureaucracy." American Sociological Review 51:295-309.

Dougherty, Kevin
1987 "The Effects of Community Colleges: Aid or Hindrance to Socioeconomic Attainment?" Sociology of Education 60:86-103.

Duncan, Otis Dudley
1961 "A Socioeconomic Index for All Occupations." in Albert Reiss, Jr et al., Occupations and Social Status: Chap. 6. Glencoe, Ill.: Free Press.

Edwards, Richard C.
1979 The Contested Terrain. New York: Basic Books.

England, Paula
1979 "Women and Occupational Prestige: A Case of Vacuous Sex Equality." Signs 5:252-265.

England, Paula and Lori McCreary
1987 "Gender Inequality in Paid Employment." In Beth B. Hess and Myra Marx Ferree (eds.), Analyzing Gender: A Handbook of Social Science Research: 286-320. Newbury Park: Sage.

Ewen, Stuart
1976 Captains of Consciousness: Advertising and the Social Roots of the Consumer Culture. New York: McGraw-Hill.

Farley, Reynolds
1984 Blacks and Whites: Narrowing the Gap? Cambridge: Harvard University Press.

Featherman, David L.
1981 "Social Strafification and Mobility." American Behavioral Scientist 24:364-385.

Featherman, David L. and Robert M. Hauser
1976 "Sexual Inequalities and Socioeconomic Achievement in the U.S., 1962-1973." American Sociological Review 41:462-483.

Featherman, David L. and Robert M. Hauser
1978 Opportunity and Change. New York: Academic Press.

Feldman, Kenneth A. and Theodore M. Newcomb
1973 The Impact Of College On Students. San Francisco: Jossey-Bass.

Freeman, Richard B. and James L. Medoff
1984 What Do Unions Do? New York: Basic Books.

Goldman, Robert and Ann Tickamyer
1984 "Status Attainment and the Commodity Form: Stratification in Historical Perspective." American Sociological Review 49: 196-209.

Gordon, David M., Richard Edwards, and Michael Reich
1982 Segmented Work, Divided Worker. Cambridge: Cambridge University Press.

Griffin, Larry J.
1978 "On Estimating the Economic Value of Schooling and Experience." Sociological Methods and Research 6:309-335.

Grimm, James W. and Robert N, Stern
1974 "Sex Roles and Internal Labor Market Structures: The 'Female' Semi-Professions." Social Problems 21:690-705.

Hall, Richard H.
1975 Occupations and the Social Structure. Second Edition. Englewood, NJ: Prentice Hall.

Hall, Richard H.
1983 "Theoretical Trends in the Sociology of Occupations." Sociological Quarterly 24:5-23.

Hall, Richard H.
1986 Dimensions of Work. Beverly Hills: Sage.

Hauser, Robert M. and David L. Featherman
1977 The Process of Stratification. New York: Academic Press.

Harvey, David
1989 The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change. Cambridge: Basil Blackwell.

Heise, David R.
1972 "Employing Nominal Variables, Induced Variables, and Block Variables in Path Analyses." Sociological Methods and Research 1:147-173.

Hirschhorn, Larry
1984 Beyond Mechanization: Work and Technology in a Postindustrial Age. Cambridge: The MIT Press.

Hodson, Randy
1978 "Labor in the Monopoly, Competitve and the State Sectors of Production." Politics and Society 8:429-480.

Horan, Patrick M.
1978 "Is Status Attainment Research Atheoretical." American Sociological Review 43:334-341.

Hout, Michael
1984a "Occupational Mobility of Black Men: 1962 to 1973." American Sociological Review 49:308-322.

Hout, Michael
1984b "Status, Autonomy, and Training in Occupational Mobility." American Journal of Sociology 89:1379-1409.

Hout, Michael
1988 "More Universalism, Less Structural Mobility: The American Occupational Structure in the 1980s." American Journal of Sociology 93:1358-1400.

Hunter, Alfred A.
1988 "Formal Education and Initial Employment: Unravelling the Relationship between Schooling and Skills Over Time." American Sociological Review 53:753-765.

Hurn, Christopher J.
1985 The Limits and Possibilities of Schooling: An Introduction to the Sociology of Education. Boston: Allyn and Bacon.

Hyllegard, David and David E. Lavin
In press "Higher Education and Challenging Work: Open Admissions and Ethnic and Gender Differences in Job Complexity." Sociological Forum, Vol. 7, Number 2 (June 1992).

Jacobs, Jerry A.
1989 Revolving Doors: Sex Segregation and Women's Careers. Stanford, CA: Stanford University Press.

Jacoby, Sanford M.
1985 Employing Bureaucracy: Managers, Unions, and the Transformation of Work in American Industry, 1900-1945. New York: Columbia University Press.

Jaffe, Abraham and Walter Adams
1971 "Two Models of Open Enrollment." in Universal Higher Education: Costs and Benefits. Washington DC: American Council on Education.

Jaynes, Gerald David and Robin M. Williams
1989 A Common Destiny: Blacks and American Society. Washington DC: National Academy Press.

Jencks, Christopher, Marshall Smith, Henry Acland, Mary Jo Bane, David Cohen, Herbert Gintis, Barbara Heyns, and Stephan Michelson
1972 Inequality: A Reassessment of the Effects of Family and Schooling in America. New York: Harper Colophon Books.

Jencks, Christopher, Susan Bartlett, Mary Corcoran, James Crouse, David Eaglesfield, Gregory Jackson, Kent McClelland, Peter Mueser, Michael Olneck, Joseph Schwartz, Sherry Ward, and Jill Williams
1979 Who Gets Ahead? Determinants of Economic Success in America. New York: Basic Books, Inc. Publishers.

Jencks, Christopher, Lauri Perman, and Lee Rainwater
1988 "What Is A Good Job? A New Measure of Labor Market Success." American Journal of Sociology 93: 1322-1357.

Kalleberg, Arne L. and Ange B. Soreson
1979. "The Sociology of Labor Markets." Annual Review of Sociology 5: 351-379.

Kanter, Rosabeth Moss
1977 Men and Women of the Corporation. New York: Basic Books, Inc. Publishers.

Kanter, Rosabeth Moss
1978 "Work in a New America" Daedalus 107: 47-78.

Karabel, Jerome
1972 "Community Colleges and Social Stratification." Harvard Educational Review 42:521-562.

Karabel, Jerome
1979 "The Sociology of Education: Perils and Possibilities." The American Sociologist 14: 85-91.

Karabel, Jerome
1986 "Community Colleges and Social Stratification in the 1980s." in L. Steven Zwerling (ed.), The Community College and Its Critics. San Francisco: Jossey-Bass.

Karabel, Jerome and A.H. Halsey
1977 "Educational Research: A Review and an Interpretation." In Jerome Karabel, and H.A. Halsey (eds.), Power and Ideology in Education. New York: Oxford University Press.

Kasarda, John D.
1983 "Entry-Level Jobs, Mobility, and Urban Minority Unemployment." Urban Affairs Quarterly 19: 21-40.

Kaufman, Robert L. and Thomas N. Daymont
1981 "Racial Discrimination and the Social Organization of Industries." Social Science Research 10: 225-255.

Kaufman, Robert L.
1986 "The Impact of Industrial and Occupational Structure on Black-White Employment Allocation." American Sociological Review 51: 310-323.

Kerbo, Harold
1976 "Marxist and Functionalist Theories in the Study of Social Stratification: A Comment." Social Forces 55: 191-192.

Kerckhoff, Alan C.
1982 "Dimensions of Educational and Occupational Attainment in Great Britain." American Sociological Review 47: 347-364.

Kerckhoff, Alan C.
1984 "The Current State of Social Moblity Research." The Sociological Quarterly 25: 139-153.

Kessler-Harris, Alice and Karen Brodkin Sacks
1987 "The Demise of Domesticity in America." In Lourdes Beneria and Catharine R. Stimpson (eds.), Women, Households, and the Economy. New Brunswick: Rutgers University Press.

Kohn, Melvin L.
1969 Class and Conformity. Homewood, Ill: The Doresy Press.

Kohn, Melvin L. and Carmi Schooler
1983 Work And Personality: An Inquiry into the Impact of Social Stratification. Norwood, N.J.: Ablex Publishing Corporation.

Kluegel, James R.
1978 "The Causes and Cost of Racial Exclusion From Job Authority." American Sociological Review 43: 285-301.

Knottnerus, David J.
1987 "Status Attainment Research and Its Image of Society." American Sociological Review 52: 113-121.

Lavin, David E., Richard D. Alba, and Richard A. Silberstein
1979 "Open Admissions and Equal Access: A Study of Ethnic Groups in the City University of New York." Harvard Educational Review 49:53-92.

Lavin, David E., Richard D. Alba, and Richard A. Silberstein
1981 Right Versus Privilege: The Open Admissions Experiment at The City University of New York. New York: The Free Press.

Lavin, David E., James Murtha, Barry Kaufman, and David Hyllegard
1986 "Long-Term Educational Attainment in an Open-Access University System: Effects of Ethnicity, Economic Status, and College Type." Paper presented at the annual meetings of the American Educational Research Association, San Francisco.

Lavin, David E., James Murtha, and David Hyllegard
1989 "Open-Access Higher Education and Work: A Fourteen Year Followup of Open-Admissions Students and Their Labor Market Experiences." Paper presented at the annual meeting of the American Educational Research Association, San Francisco.

Lavin, David E. and David B. Crook
1990 "Open Admissions and Its Outcomes: Ethnic Differences in Long-Term Educational Attainment." American Journal of Education 98: 389-425.

Lever-Tracy, Constance
1984 "The Paradigm Crisis of Dualism: Decay or Regeneration?" Politics and Society 13: 59-89.

Lichter, Daniel T.
1988 "Racial Differences in Underemployment in American Cities." American Journal of Sociology 93: 771-92.

Marini, Margaret Mooney and Mary Brinton
1984 "Sex Typing in Occupational Socialization." In Barbara F. Reskin (ed). Sex Segregation in the Workplace: Trends, Explanations, and Remedies: 192-232. Washington, D.C.: National Academy Press.

Marx, Karl
1977 Capital: A Critique of Political Economy, Vol. 1. New York: Vintage Books.

McClelland, Katherine
1990 "Cumulative Disadvantage among the Highly Ambitious." Sociology of Education 63: 102-121.

McClendon, Mckee J.
1976 "The Occupational Status Attainment Process of Males and Females." American Sociological Review 41: 606-26.

McLaughlin, Steven D.
1978 "Occupation Sex Identification and the Assessment of Male and Female Earnings Inequality." American Sociological Review 43: 909-921.

Mickelson, Roslyn A.
1989 "Why Does Jane Read and Write So Well? The Anomaly of Women's Achievement." Sociology of Education 62:47-63

Miller, Ann R., Donald J. Treiman, Pamela S. Cain and Patricia A. Roos
1980 Work, Jobs, and Occupations: A Critical Review of the 'Dictionary of Occupational Titles'. Washington, D.C.: National Academy Press.

Mills, C. Wright
1951 White Collar: The American Middle Classes. New York: Oxford University Press.

Mincer, Jacob
1974 Schooling, Experience, and Earnings. New York: Columbia University Press.

Mincer, Jacob
1989 "Human Capital and the Labor Market: A Review of Current Research." Educational Researcher 18:27-34.

Moberg, David
1980 "Work and American Culture: The Ideal of Self-Determination and the Prospects for Socialism." Socialist Review 10: 21-56.

Mollenkopf, John H.
1988 "The Postindustrial Transforamation of the Political Order in New York City." In John H. Mollenkopf (ed.), Power, Culture, and Place: Essays on New York City: 223-258. New York: Russell Sage Foundation.

Monk-Turner, Elizabeth
1990 "The Occupational Achievements of Community and Four-Year College Entrants." American Sociological Review 55: 719-725.

Mueller, Charles W. and Toby L. Parcel
1986 "Ascription, Dimensions of Authority, and Earnings: The Case of Supervisors." In Robert V. Robinson (ed.), Research in Social Stratification and Mobility: 199-222. Greenwich, Connecticut: JAI Press Inc.

National Education Association
1988 The 1988 NEA Almanac of Higher Education. Washington DC: NEA Communications.

O'Connor, James
1973 The Fiscal Criisis of the State. New York: St. Martin's Press

O'Toole, James
1973 Work in America. Cambridge: The MIT Press.

Page, Charles H.
1969 Class and American Sociology: From Ward to Ross. New York: Schocken.

Parcel, Toby L. and Charles W. Mueller
1983a Ascription and Labor Markets: Race and Sex Differences in Earnings. New York: Academic Press.

Parcel, Toby L. and Charles W. Mueller
1983b "Occupational Differentiation, Prestige, and Socioeconomic Status." Work and Occupations 10:49-80.

Parkin, Frank
1978 "Social Stratification." In Tom Bottomore and Robert Nisbet (ed), A History Of Sociological Analysis. New York: Basic Books.

Persell, Caroline
1977 Education and Inequality: The Roots of Stratification in America's Schools. New York: Free Press.

Pincus, Fred L.
1980 "The False Promise of Community Colleges: Class Conflict and Vocational Education." Harvard Educational Review 50:332-361.

Pincus, Fred L.
1986 "Vocational Education: More False Promises." In L. Steven Zwerling (ed.), The Community College and Its Critics: 41-52. San Francisco: Jossey-Bass Publishers.

Piore, Michael J.
1974 "Upward Mobility, Job Monotony, and Labor Market Structure." In James O'Toole (ed.), Work and the Quality of Life: Resource Papers for "Work In America." Cambridge: The MIT Press.

Portes, Alejandro and Reginald Wilson
1976 "Black-White Differences in Educational Attainment." American Sociological Review 41:414-431.

Robinson, Robert V. and Jonathan Kelley
1979 "Class as Conceived by Marx and Dahrendorf: Effects on Income Inequality and Politics in the United States and Great Britain." American Sociological Review 44:38-58.

Rodgers, Daniel T.
1974 The Work Ethic in Industrial America 1850-1920. Chicago: University of Chicago Press.

Roos, Patricia
1981 "Sex Segregation in the Workplace: Male-Female Differences in Returns to Occupation." Social Science Research 10: 195-224.

Rosenfeld, Rachel A.
1980 "Race and Sex Differences in Career Dynamics." American Sociological Review 45:583-609.

Rosenfeld, Rachel A.
1983 "Sex Segregation and Sectors: An Analysis of Gender Differences in Returns from Employer Changes." American Sociological Review 48: 637-655.

Rumberger, Russell W.
1981 Overeducation In The U.S. Labor Market. New York: Praeger Publishers.

Sabel, Charles F.
1979 "Marginal Workers in Industrial Society." In Michael J. Piore (ed.), Unemployment and Inflation. White Plains, NY: M.E. Sharpe.

Sewell, William H., Archibald O. Haller, and Alejandro Portes
1969 "The Educational and Early Occupational Attainment Process." American Sociological Review 34:82-92.

Sewell, William H., Archibald O. Haller, and George W. Ohlendorf
1970 "The Educational and Early Occupational Attainment Process: Replication and Revisions." American Sociological Review 35:1014-27.

Sewell, William H. and Robert M. Hauser
1975 Education, Occupation, and Earnings: Achievement in the Early Career. New York: Academic Press.

Siegel, P. M.
1971 Prestige in the American Occupational Structure. Unpublished Ph.D. dissertation, University of Chicago.

Sokoloff, Natalie J.
1980 Between Money and Love: The Dialectics of Women's Home and Market Work. New York: Praeger.

Spaeth, Joe L.
1979 "Vertical Differentiation Among Occupations." American Sociological Review 44:746-762.

Spaeth, Joe L.
1984 "Structural Contexts and the Stratification of Work." In Donald J. Treiman and Robert V. Robinson (eds.), Research in Social Stratification and Mobility: 77-92. Greenwich, Connecticut: JAI Press Inc.

Spaeth, Joe L.
1985 "Job Power and Earnings." American Sociological Review 50: 603-617.

Spenner, Kenneth I.
1983 "Deciphering Prometheus: Temporal Change in the Skill Level of Work." American Sociological Review 48:824-837.

Spilerman, Seymour
1977 "Careers, Labor Market Structures and Socioeconomic Achievement." American Journal of Sociology 83:551-93.

Stafford, Walter W.
1985 Closed Labor Markets: Underrepresentation of Blacks, Hispanics and Women in New York City's Core Industries and Jobs. New York: Community Service Society of New York.

Strauss, George
1974 "Is There a Blue-Collar Revolt Against Work?" In James O'Toole (ed), Work and the Quality of Life: Resource Papers for "Work In American". Cambridge: The MIT Press.

Strober, Myra
1984 "Toward a General Theory of Occupational Sex Segregation: The Case of Public School Teaching." In B. Reskin (ed.) Sex Segregation in the Workplace. Washington, DC: National Academy Press.

Strumpel, Burkhard
1971 "Higher Education and Economic Behavior." In Stephen B. Withey (ed.), A Degree and What Else?: 55-79. New York: McGraw-Hill.

Tabb, William K.
1982 The Long Default. New York: Monthly Review Press.

Tolbert, Charles M., II, Patrick M. Horan, and E.M. Beck
1980 "The Structure of Economic Segmentation: A Dual Economy Approach." American Journal of Sociology 85: 1095-1116.

Treiman, Donald J. and Kermit Terrell.
1975 "Sex and the Process of Status Attainment: A Comparison of Working Women and Men." American Sociological Review 40: 174-200.

Trow, Martin
1977 "The Second Transformation of American Secondary Education." Reprinted in Jerome Karabel and A.H. Halsey (eds), Power and Ideology in Education. New York: Oxford University Press.

University Commission on Admissions.
1969 "Report and Recommendations to the Board of Higher Education." New York: Board of Higher Education.

U.S. Bureau of the Census
1983 1980 Census of Population: Detailed Population Characteristics: New York. Washington, DC: Government Printing Office.

U.S. Bureau of the Census
1984 1980 Census of Population: Detailed Population Characteristics: U.S. Summary. Washington, DC: Government Printing Office.

U.S. Bureau of the Census
1987 What's it Worth? Educational Background and Economic Status: Spring 1984. Washington, DC: Government Printing Office.

U.S. Department of Labor
1984 Educational Attainment of Workers, March 1982-83. Bulletin 2191. Washington DC: U.S. Government Printing Office.

U.S. Department of Labor
1977 Dictionary of Occupational Titles. Fourth Edition. Machine readable data file available from Inter-University Consortium for Political and Social Research, University of Michigan, Ann Arbor.

U.S. Department of Labor
1988 The New York Transformation: Dimensions of the Knowledge Economy. New York: Bureau of Labor Statistics.

Useem, Michael and Jerome Karabel
1986 "Pathways to Top Corporate Management." American Sociological Review 51:184-200.

Waldinger, Roger
1986-87 "Changing Ladders and Musical Chairs: Ethnicity and Opportunity in Post-Industrial New York." Politics & Society 15:369-401.

Willis, Paul
1977 Learning to Labor: How Working Class Kids Get Working Class Jobs. New York: Columbia University Press.

Wilson, William J.
1980 The Declining Significance of Race: Blacks and Changing American Institutions. Second Edition. Chicago: University of Chicago Press.

Wilson, William J.
1987 The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy. Chicago: University of Chicago Press.

Wolf, Wendy C. and Neil D. Fligstein
1979a "Sexual Stratification: Differences in Power in the Work Setting." Social Forces 58:94-107.

Wolf, Wendy C. and Neil D. Fligstein
1979b "Sex and Authority in the Work-place: The Causes of Sexual Inequality." American Sociological Review 44:235-252.

Wright, Erik Olin
1978 "Race, Class, and Income Inequality." American Journal of Sociology 83: 1368-1419.

Wright, Erik Olin
1979 Class Structure and Income Determination. New York: Academic Press.

Wright, Erik Olin and Luca Perrone
1977 "Marxist Class Categories and Income Inequality." American Sociological Review 42:32-55.

Yankelovich, Daniel
1974 "The Meaning of Work." In Jerome M. Rosow (ed), The Worker and the Job: Coping with Change. Englewood Cliffs: Prentice-Hall, Inc.

Yankelovich, Daniel
1979 "Work, Values, and the New Breed." In Clark Kerr and Jerome M. Rosow (eds.), Work in America: The Decade Ahead. New York: Van Nostrand Reinhold Company.

Zuboff, Shoshana
1988 In The Age Of The Smart Machine: The Future of Work and Power. New York: Basic Books, Inc. Publishers.