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ABSTRACT

A study was conducted to examine race and sex differences in occupational aspirations and the role of these differences in perpetuating under- or overrepresentation of women and blacks in different occupations. The underrepresentation of women, especially blacks, in all levels of entrepreneurial jobs was stressed since these jobs constitute a large proportion of all jobs and pay better for less education than other fields. Data from the National Assessment of Educational Progress regarding occupational aspirations, values, and self-reported competencies of thirteen-year-olds, seventeen-year-olds, and adults aged twenty-six to thirty-five were used to examine race and sex differences in orientation to particular types of occupations. Based on these results, speculations were presented about how people adjust their occupational goals in ways that help perpetuate occupational segregation. The following five principles were formulated: (1) society-wide stereotypes about good jobs are mirrored in the occupational aspirations of children; (2) sterectypes about occupations appropriate for men are different from those for women; (3) these stereotypes are largely the same for all racial and ethnic groups; (4) as children go through adolescence their aspirations become more realistic; (5) and the races and sexes adjust their aspirations towards different sets of occupations. The data implied that strategies to decrease occupational segregation by decreasing educational handicaps will not eradicate all important differences and recommended that more attention be devoted to understanding the socialization processes that lead the races and sexes to seek different jobs. (Author/BM)

RACE AND SEX DIFFERENCES IN OCCUPATIONAL ASPIRATIONS: THEIR DEVELOPMENT AND CONSEQUENCES FOR OCCUPATIONAL SEGREGATION

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Introductory Statement

The Center for Social Organization of Schools has two primary objectives: to develop a scientific knowledge of how schools affect their students, and to use this knowledge to develop better school practices and organization.

The Center works through four programs to achieve its objectives. The Policy Studies in School Desegregation program applies the basic theories of social organization of schools to study the internal conditions of desegregated schools, the feasibility of alternative desegregation policies, and the interrelation of school desegregation with other equity issues such as housing and job desegregation. The School Organization program is currently concerned with authority-control structures, task structures, reward systems, and peer group processes in schools. It has produced a large-scale study of the effects of open schools, has developed Student Team Learning instructional processes for teaching various subjects in elementary and secondary schools, and has produced a computerized system for school-wide attendance monitoring. The School Process and Career Development program is studying transitions from high school to post secondary institutions and the role of schooling in the development of career plans and the actualization of labor market outcomes. The Studies in Delinquency and School Environments program is examining the interactions of school environments, school experiences, and individual characteristics in relation to in-school and later-life delinquency.

This report, prepared by the Policy Studies in School Desegregation Program, is part of a series that examines the process by which the races and sexes become occupationally segregated, how schools are currently contributing to or counteracting this form of segregation, and how the educa-

tional system might be involved in new strategies to decrease occupational segregation. This report examines race and sex differences in the development of occupationally-related aspirations, interests, values, and competencies during the elementary through the postsecondary school years.

Abstract

This paper examines the development of race and sex differences in occupational aspirations and the possible role of these differences in perpetuating the current under- or overrepresentation of women and blacks in different occupations. The underrepresentation of women and especially of blacks in entrepreneurial jobs (e.g. sales and management) at all levels is stressed because entrepreneurial work constitutes a large proportion of all jobs and it pays better for less education than do other fields of work. Career and Occupational Development assessment data from the National Assessment of Educational Progress regarding occupational aspirations, values, and self-reported competencies of 13-year-olds, 17-year-olds, and adults aged 26-35 were used to examine race and sex differences in orientation to particular types of occupations. On the basis of the results of this as well as other studies, speculations are presented about how people adjust their occupational goals in ways that help perpetuate occupational segregation. The formulation consists of five principles: (a) society-wide stereotypes about good jobs are mirrored in the occupational aspirations of children, (b) the stereotypes about the occupations appropriate for men are different from those for women, (c) these stereotypes are largely the same for all racial and ethnic groups, (d) as children go through adolescence their aspirations become more realistic, and (e) the races and sexes adjust their aspirations towards different sets of occupations. One implication is that strategies to decrease occupational segregation by decreasing educational handicaps will not eradicate all important differences in what the races and sexes bring to the labor market. More attention should be devoted to understanding the socialization processes that lead the races and sexes to seek different jobs.

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Some jobs are held primarily by men, others by women, and still others by particular ethnic or racial groups. In the last decade we have increasingly recognized that this uneven distribution of the races and sexes across jobs is often the result of restricted educational and employment opportunities, and we have sought ways to reduce the handicaps that women and minorities have in the labor market. One major strategy has been to decrease discrimination in hiring and promotion. Another strategy has been to increase the academic skills and attainment levels of women and minorities so that a larger proportion are trained for traditionally white male fields such as law, engineering, physical science, and medicine.

This paper proposes that one aspect of unevenness in employment should receive more attention than it currently does--the underrepresentation of women and blacks in sales, management, and other entrepreneurial work. First, the importance of this underrepresentation in entrepreneurial work is discussed. Second, some reservations about the extent to which our current emphasis on academic improvement among minorities and women is likely to improve their representation in this work are presented. Third, it is argued that race and sex differences in occupational values and aspirations may be important in explaining segregation by type of occupation, and evidence about young people's aspirations are summarized to support this contention. Finally, speculations are presented about the process by which young people adjust their occupational goals in ways that help perpetuate occupational segregation by race and sex.

Race and Sex Differences in Employment

Why is the underrepresentation of women and blacks in entrepreneurial work important? Four types of evidence are summarized below: (a) blacks

are more poorly represented in entrepreneurial work than in any other, (b) entrepreneurial work constitutes a substantial proportion of all jobs, (c) less education is required on the average to obtain high-level entrepreneurial jobs than other types of work, and (d) entrepreneurial work pays well. The evidence for these four propositions is drawn primarily from other studies in the program of research of which the current report is a part. In these studies entrepreneurial work is one of six carefully-defined categories used to classify occupations by field of work, and it refers primarily to sales and management jobs (both salaried and self-employed).

Representation is especially low in entrepreneurial work. It is widely recognized that blacks and women are on the average employed in lower-level jobs than are white males in the same field of work. It is less appreciated, though, that race and sex differences in employment among different types of jobs at the same level are often at least as large as the differences among levels of work. Table 1 illustrates this point. Although the percentage of workers who are women and the percentage who are blacks tends to be highest for low-level jobs, the percentage female or black varies greatly even within the generally high-level professional and technical occupations. The particular percentages that I would like to focus on here are those for management and sales workers, who comprise most but not all of entrepreneurial workers. Although 10% of all workers are black, only 3% of management and sales workers are black. This percentage is lower than that for all other major census categories of work, including the generally higher-level professional and technical work. Although not shown here, generally only 1 to 4% of workers (in particular sales and management occupations at any level are

black (U.S. Bureau of the Census, 1973b). Women are also underrepresented in management, but not in sales.

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Insert Table 1 About Here

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Using a theoretically-based multidimensional classification of occupations which more clearly separates field and level of work than does the census scheme, Gottfredson (in press a) has shown that blacks are severely underrepresented even in the lowest levels of work classified as entrepreneurial. This contrasts with the pattern for work classified as social (e.g. social service and education), where blacks are reasonably well-represented and women are overrepresented in high-level jobs.

The increasing representation of blacks in natural science, medicine, and other fields traditionally dominated by white males has led some observers (Freeman, 1974) to optimistically infer that employment discrimination has all but disappeared for blacks. Unfortunately, the continuing low representation of blacks in management and sales goes largely unnoticed.

Entrepreneurial work provides a large number of jobs. The failure to pay more attention to race and sex differences in employment in entrepreneurial work is a crucial oversight because entrepreneurial work is a large source of jobs in our economy. About 17% of all workers and about a quarter of all men are in this field of work (Gottfredson, in press a). There are as many high-level jobs in entrepreneurial work as there are in science and medicine. Furthermore, entrepreneurial work is a source of more mid-level employment than are all other fields of work, i.e., clerical, social science and education, manual and technical, artistic, or scientific.

Education is less important for entering high-level entrepreneurial work. Previous research with white men has suggested that attaining a given level of entrepreneurial work requires less investment in education than does attaining an equivalent level in other fields of work (Gottfredson, 1977; in press b). The following examples illustrate this difference among high-level jobs. In 1970, 54% of young (aged 25-34) white male managers and administrators had 13 or more years of education and 30% had 16 or more years (U.S. Bureau of the Census, 1973a). Looking at one specific type of manager--bank officers and financial managers--the percentages were 73 and 45. In contrast, the corresponding percentages for accountants (an example of high-level office and clerical work) and for social workers were much higher: 89% and 90% had 13 or more years and 64% and 80% had 16 or more years of schooling.

Incomes are high on the average in entrepreneurial work. White males in entrepreneurial work earn more than do white males in other fields and this difference is greater than would be expected on the basis of their education, job level, and hours worked (Gottfredson, 1977). For example, white male full-time entrepreneurial workers aged 36-65 who had only 12 years of education earned as much on the average in 1969 as did men with 16 or more years of education in social service and education (Gottfredson, in press b). The latter group of men earned only about half as much as equally educated men in entrepreneurial or scientific work.

Explanations of Employment Differences

Why do we find so few blacks and women in entrepreneurial work? Discrimination in the labor market is one obvious possibility. Blacks and women may have suffered from greater discrimination in entrepreneurial than in

other fields of work. A second type of explanation is that the races and sexes differ in the skills and other job-related attributes they possess even before entering the labor market, and these differences can lead to differences in employment even in the absence of discrimination in hiring and promotion. Sex--and particularly race--differences in academic aptitudes and attainment have received the most attention, and reducing these pre-labor market differences has been a major strategy for promoting occupational equality. As useful as this strategy may be, several pieces of evidence suggest that this strategy may be less useful for increasing the unusually low representation of women and blacks in entrepreneurial work than for changing their representation in other types of work.

Specifically, differences in educational attainment do not seem to be the major explanation of racial differences among men, because no matter what educational group we consider, a much smaller proportion of black than white men are found in entrepreneurial work. In 1970, 28% of white men aged 36-65 who had exactly 12 years of education were in this field compared to only 8% of such blacks; the percentages for men with 16 or more years of education were 39 for whites and 12 for blacks (Gottfredson, in press b). Instead, black men were found more often in manual work (especially if they were not college educated) and in social service and education (especially if they were college educated).

One might argue that even though entrepreneurial jobs may not require much education, they may require especially high levels of intelligence. But if what we mean by intelligence is academic and intellectual ability as measured by standard aptitude and achievement tests or by grades, this does not appear to be true. Holding job level constant, IQ's are lower among

white men working in sales and management jobs than among men working in science or social service and education (Gottfredson and Brown, 1978b). The foregoing does not exclude the possibility that specific competencies relatively independent of academic aptitude are important in entrepreneurial work and disproportionately possessed by white males. Unfortunately, we have only limited information about race and sex differences in specific job-related abilities. The main problem is that aptitude test batteries assess mechanical, spatial, numerical, computational, and other such abilities useful in mechanical, clerical, and scientific work, but they do not assess the interpersonal competencies important in work with people and which are different for the selling and managing jobs than they are for helping work (e.g. see the classifications of abilities reviewed by Dunnette, 1976).

The remainder of this paper attempts to make the case that there are important pre-labor market differences between the races and sexes other than in education and academic ability. Specifically, there is good reason to expect that blacks and women prefer and look for a different mix of jobs than do white men. These race and sex differences in job search behavior may exacerbate the effects of labor market discrimination and contribute to the underrepresentation of blacks and women in entrepreneurial work even in the absence of discrimination.

Race and Sex Differences in Occupational Aspirations. What reason is there to believe that an analysis of occupational aspirations can help explain race and sex differences in patterns of employment, particularly in entrepreneurial work? First, vocational psychologists have shown that aspirations and interests are useful in predicting field of work actually entered (Nafziger, Holland, Helms, & McPartland, 1974; Lucy, 1976; Campbell,

1971). They also provide explanations of how this occurs: people who are interested in and aspire to different types of work are also likely to develop different sorts of skills, seek different types of education and training, expose themselves to different sorts of occupational experiences and information, and actively look for different kinds of jobs when they enter the labor force (Holland, 1973).

Second, there are clear race and sex differences in aspirations. Although aspirations for level of work are at least as high among blacks and women as they are among white men (Kuvlesky, Wright, & Juarez, 1971; Brief & Aldag, 1975), aspirations for field of work appear to differ by both race and sex. Females differ dramatically from males in their vocational interests and aspirations for field of work, and sex differences in job-related interests and competencies are consistent and marked in early childhood as well as in adulthood (Birk, 1975; Gottfredson & Holland, 1975; Nafziger et al., 1974). These sex differences in aspirations are consistent with sex differences in actual employment. For example, Gottfredson, Holland, and Gottfredson (1975) found that the distribution of aspirations among male and female adolescents corresponded roughly to the distribution of employment by field of work among adults of the same sex.

Less evidence is available for blacks, but the evidence we have suggests that the aspirations of blacks differ from those of whites even when differences in social class are taken into account. Blacks tend to aspire to high-level jobs relatively more often than do whites (Cosby, 1971; Kuvlesky, Wright, & Juarez, 1971). There also appear to be significant differences in the choice of field of work. Recent data on college students show that black undergraduates major more often in social science and education and

less often in natural science and engineering than do whites (Thomas, 1978; Flanagan, Shaycoft, Richards, & Claudy, 1971; El-Khawas & Bisconti, 1974), and vocational interest inventories consistently reveal higher interests among blacks in the helping occupations such as social work and education (Hager & Elton, 1971; Doughtie, Chang, Alston, Wakefield, & Yom, 1976; Kimball, Sedlacek, & Brooks, 1973). Several surveys of occupational plans conducted in the 1960's showed that black undergraduates aspired less often to business careers than did whites (Sharp, 1970; Fichter, 1967), but the more recent data cited above suggest that this difference may be disappearing. We have almost no evidence about the aspirations for field of work among people who do not go to college. In a nationally representative sample of young men aged 14 to 24 in 1966, whites aspired twice as often to sales and management jobs as did blacks, who more often aspired to manual and technical work and to social service and education jobs (Nafziger et al., 1974). Several old and unrepresentative surveys of Southern black children also revealed this pattern (Gray, 1944; Witty, Garfield, & Brink, 1941).

Data on racial differences in ratings of occupations are consistent with these differences in aspirations. Although blacks and whites largely rank occupations in the same way (Siegel, 1970), blacks have been shown to rank teacher, mortician, social worker, and other jobs widely held by blacks higher in status than do whites (Brown, 1955).

Available evidence is thus consistent with the hypothesis that race and sex differences in aspirations may be an important determinant of race and sex differences in field of employment (e.g. it shows that women and blacks both aspire to and are employed in social service and educational work more often than are white men). But the bits and pieces of evidence do not answer

some basic questions. Are the race and sex differences in aspirations large enough to account for much of the differences in actual employment? At what age do race differences in occupational aspirations and values develop? To what extent are they the result of race differences in social class? And how important might differences in socialization be for orienting women and blacks to different jobs and thus for perpetuating job segregation?

This study was designed to provide evidence for answering such questions. It examined nationally representative data on the occupational aspirations and the vocational decision-making process within three age groups--13-year-olds, 17-year-olds, and young adults aged 26-35. Responses to four questions were used to examine race and sex differences in how young people think about and make their occupational choices: What should you consider when choosing a job, what job are you most interested in, what do you like and dislike about your first job choice, and what abilities do you have or not have that you should consider when selecting a job?

Only by charting the course of development of race and sex differences will we know where interventions are likely to be most effective. If there are no race differences in orientation to field of work or if they develop only after entry into the labor market, then we probably need to concentrate primarily on changing the job opportunities of blacks rather than the characteristics they bring with them to the job market.

Method

Data were obtained from the 1973-74 assessment of career and occupational development conducted by the National Assessment of Educational Progress (1977). This assessment was designed to measure the development of occupational skills, knowledge, attitudes, and decision-making ability in a

nationally representative sample of four age groups: 9-year-olds, 13-year-olds, 17-year-olds, and adults aged 26-35. Three age groups are included in the analyses presented here; 9-year-olds are not included because they were not asked the particular questions used in the following analyses.

The following questions were used to examine job aspirations, values, and abilities:

Aspirations. The 13- and 17-year-olds were asked about their future job plans and to name the one job they were most interested in doing. Adults were asked what their present main job was, but no question was included on aspirations comparable to that of the two younger groups.

Values. All age groups were asked to list ten different things that a person should think about in choosing a job or career. The 13- and 17-year-olds were also asked to name three things they would like and three things they would dislike about their first job choice. Acceptable responses were grouped into 11 categories such as responsibility and challenge, job duties, availability, and prestige.

Abilities. Only one item assessed job-related abilities and it was included only in the assessment of adults. They were asked the following question. "Suppose you were looking for a job, what two skills or abilities do you have that would help you select the job? If you are looking for a job, what two skills or abilities do you LACK that you would want to consider in selecting the job?" Most acceptable responses were grouped into 9 categories of specific skills (such as professional, managerial, or clerical) or into 4 general skills (such as physical, intellectual, or interpersonal).

Occupational aspirations are grouped in this report into 5 levels: professional, semi-professional, skilled, semi-skilled, and unskilled. The

more detailed occupational groups were classified into these five levels according to the mean prestige (Gottfredson & Brown, 1978a) of the occupational titles subsumed within the groups. Housewives and military officers are reported separately but are assumed to be similar in status to the skilled groups.

All analyses were performed separately by race and sex. In order to provide a crude measure of social class, students were divided into two groups according to the highest educational level of either of their parents: those whose parents had 12 or fewer years of education and those whose parents had 13 or more years.

Several characteristics of the assessment design should be noted. First, the assessment items for each age group were divided into from 4 to 14 non-overlapping separate sub-assessments. Each of these units of assessment items was given to approximately 2500 people. No one in the three youngest groups was given more than one unit of items; some adults were given two, three, or all four of the units for adults. Therefore, the results reported here for a given age group do not necessarily refer to the same people. Tables 2 and 3 refer to one set of people and Tables 4, 5, and 6 refer to another set of people.

Second, 17-year-olds were classified as either in school or out of school (which includes both high school dropouts and early graduates) and these two groups were not always asked the same questions. Some of the tables presented here include all 17-year-olds, others include only those still in school. If an item refers only to in-school 17-year-olds, this is noted on the tables.

Third, the sample design is a complex, stratified multi-stage design that does not provide for direct, unbiased, simple, or inexpensive computation of sampling errors. Tests of significance are therefore not reported here. Small percentage differences should not be considered significant because some of the groups in the analyses are quite small. The percentages in the tables are based on weighted data, but the N's reported in the tables are the unweighted number of cases.

The National Assessment data are particularly valuable for investigating patterns of early occupational development among youngsters of different races and sexes because they are nationally representative. Another advantage is that different age groups are assessed with the same items permitting some inferences about development with age. When the assessments are repeated in the coming years, cohort differences can be better disentangled from developmental changes, thus making possible more valid inferences about development with age.

Findings

The following pages describe the race, sex, and age differences and similarities found in the analyses of occupational aspirations, values, and abilities. Some interpretation of these results is provided as they are presented, and a full discussion of the role of the differences in maintaining occupational segregation appears in the final section of this paper.

All three age groups were asked to list ten things a person should consider when choosing a job. Table 2 shows the percentage of people unable to list anything at all as well as the median number of things listed by people who were able to list at least one thing. Percentages are presented

separately by age, sex, race, and social class. The two striking differences are that the ability to name anything at all, as well as the number of things mentioned, were greater with age and were greater among whites than among blacks of similar social class.

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Insert Table 2 About Here

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Table 3 provides a picture of the pattern of particular things considered because it presents the percentages of people mentioning particular factors at least once (if they mentioned anything at all). Although the percentage of people listing each particular factor at least once varies by social class (table not shown), results are not shown separately by social class in this table because the differences seem to result primarily from variations in the number of things these groups name rather than from differences in the patterns of which particular factors they mention most often. The percentages also differ by race, sex, and age, but the pattern of which particular things are mentioned most and least often is largely the same across all groups because the differences appear to result primarily from differences in the number of items mentioned. This table is useful, though, for showing some large age differences (particularly between 17-year-olds and adults whose response rates are similar) and the consistent pattern of which factors are mentioned most often by all age, sex, and race groups.

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Insert Table 3 About Here

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Working conditions (which include pay) are mentioned by almost everyone who mentions anything at all. General statements about being interested in or satisfied with the work are also mentioned by most people, but references to specific job duties are mentioned by only 9-18% of the people. Ability to get a job (as reflected by mentioning job qualifications and personal abilities) are of next most concern, with generally a third to a half of the people mentioning each of these two factors. Although this concern is higher for 17-year-olds than for adults (possibly because the adults have more experience and training); concern for job availability and opportunity for advancement is greater with age. Responsibility and interpersonal relations received the least mention. Two other factors--discrimination and ethical considerations--were mentioned rarely and are not listed in Table 3.

The races and sexes are similar in what they say they should consider in selecting a job. But do they select the same jobs? Tables 4 and 5 show that they do not. Table 4 summarizes differences in the levels of work desired by 13- and 17-year olds. The upper panel shows results for all students; the lower panel controls somewhat for social class by presenting results only for students whose parents had 12 or fewer years of education. When the results for all students of both races are examined, the major difference is that more women than men aspire to professional and semi-professional jobs but that the proportion of women aspiring to such jobs drops by age 17. Race differences are apparent only when social class is controlled. When only students with lesser-educated parents are considered, it is clear that (at least among 17-year-olds) a higher proportion of blacks aspire to the two higher levels of work.

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Insert Table 4 About Here

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Table 5 shows the specific categories of work that the students aspire to. The first observation is that sex differences are much larger than race differences. The second is that the racial differences which do exist are consistent with the previously noted racial differences in employment. At age 13 white males aspire more often than black males to be business managers and owners, farmers, and "other professionals" whereas black males more often aspire to be social workers or they more often fail to state any aspiration.

The major difference among the 13-year-old females is that white females favor teaching more often than do blacks who in turn aspire more often to nursing.

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Insert Table 5 About Here

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Although data for the 17-year-olds exclude those who are no longer in school, the differences between the 13- and 17-year-olds suggest that aspirations change during adolescence. The pattern of age differences suggests that aspirations become more similar to the actual employment patterns of adults. Aspirations for the glamour jobs of athlete (for males) and model or stewardess (for females) decrease. The major difference for white males is an increase for craftsman and mechanic and a decrease for lawyer and doctor. It appears that the older black males no longer consider becoming lawyers and natural scientists and instead say they want to be non-medical technicians, draftsmen, mechanics, and military officers. A relatively high proportion still want to be athletes. At age 17, fewer females want to be teachers and nurses and more want to be clerical workers. One major

racial difference among 17-year-old females is the same as for the 13-year-old females: whites more often prefer teaching and blacks more often prefer nursing. The other race difference among the 17-year-old females is that white females aspire more often to clerical work and black females to "other professional" (largely social science).

Table 2 suggested that older youngsters have thought more about prospective occupations because they are able to say more about what they should consider in their choice. Tables 4 and 5 imply that the 13-year-olds have recognized the difference between "female occupations" and "male occupations." And they imply that by age 17 youngsters have recognized where most people of their own sex are actually employed, because boys apparently have shifted aspirations toward more manual work and women toward more clerical work. Although there are race differences in aspirations, they are small compared to sex differences and compared to race differences that might have been expected on the basis of actual employment. The results do indicate that white males more often prefer sales and management work than do either blacks or women, but the differences are negligible, especially considering the much larger race and sex differences in actual entrepreneurial employment among adults. Although youngsters' aspirations appear to become more "realistic" with age, they are still quite different in the aggregate from the jobs the youngsters are actually likely to get. This is true not only for blacks and women, but for white males as well. In particular, note how few white males aspire to entrepreneurial work. In fact, a much smaller proportion of the white males aspired to managerial work than to the skilled trades although the former is a larger source of employment for white men.

The next assessment item asked students to state three things they liked and three things they disliked about their first job choice. Responses were classified by the National Assessment into the same categories as were the responses to the earlier item asking people to list the things they would consider when choosing a job, with the addition of one category--helping people. It appears that although helping people is not a frequently cited consideration in choosing a job, it is frequently cited as a criterion for evaluating job choices already made. Responses fall primarily into the five categories shown in Table 6. Few people mentioned anything that is not included in these five categories; for example, surprisingly few mentioned prestige, availability, or qualifications required. There appeared to be social class differences, so the results are presented both for all students and for students with lesser-educated parents.

Of the five categories, only "helping people" is clearly indicative of interests in some rather than other fields of work. Although dealing with people is important in both social and enterprising work, helping (rather than persuading or managing) people is particularly characteristic of work in social service and education but not of entrepreneurial work. Thus the only prediction was that women and blacks would mention helping people as something they liked about their job choice more often than would white males. Table 6 shows that this appears to be true. Looking at the lower panel, which includes only students with lesser-educated parents, black males more often than whites cite helping people as a desirable aspect of their job choice--even though it was not clear from Table 5 that they actually had chosen "helping" occupations more often. Once again the sex differences are larger than the race differences. There are no clear age differences

between the two age groups for this category.

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Insert Table 6 About Here

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Table 5 suggested that both males and females change their aspirations with age, but they change their aspirations in sex-typed ways. Table 7 indicates that the work that adult men and women consider looking for has become even more sex-typed than in adolescence. This table shows the percentages of adults mentioning different abilities they have and abilities they lack that they should consider when selecting a job. The abilities men and women mention as having tend to be the same ones men and women say they lack. The abilities mentioned differ by sex, though, indicating that their statements do not necessarily reflect differences in abilities actually possessed but that they reflect the abilities that men and women are concerned about having. Looking at specific areas of occupational competence, it appears that men are concerned primarily about their skills in professional, manual, and operative work. In contrast, women are concerned primarily about their clerical and office skills.

It seems that by early adulthood sex differences in work orientation have become pronounced. Experience in sex-typed jobs may be an important cause of this because, as Table 8 shows, young women are employed disproportionately in clerical work and men in managerial and manual work and have probably developed the skills for these jobs through on-the-job experience and training. Racial differences are also in accord with patterns of aspirations and employment described earlier, but they are less striking than the sex differences. Although blacks tend to mention fewer areas of concern,

a greater proportion of black women emphasized health service and "other service" skills. In addition, a smaller proportion of both blacks and females than of white males are concerned about entrepreneurial (i.e. managerial, business and sales) skills.

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Insert Tables 7 and 8 About Here

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An earlier table (Table 4) suggested that interest in entrepreneurial work increased with age among male adolescents, although it was always about twice as frequent among whites. Table 7 suggests that this trend continues during the early years after high school. The race differences in orientation to entrepreneurial work may be partly a result of different experiences in the labor market as just suggested, but the difference in orientation does appear to develop before youngsters have much experience in the labor market. This suggests that differences in what the races and sexes want to do, even before they look for jobs, limit the range of jobs they seek; differences in the jobs they get then amplify the initial differences in preferences for field of work.

Conclusions

The objective of this paper was to examine the hypothesis that race and sex differences in aspirations for field of work are an important determinant of race and sex differences in field of actual employment. The underrepresentation of women and blacks in entrepreneurial work was of special concern because such work provides a large pool of well-paying jobs which do not require a large investment in education. Cross-sectional data on the occupational aspirations, values, and self-reported competencies of three age groups

were used to explore the development of differences in the jobs the races and sexes orient themselves to in adolescence and early adulthood. The analysis focused on documenting the size of race and sex differences in occupational aspirations for different fields of work and the ages at which they appear. The data are not sufficient to answer the question of how much of an effect race and sex differences in aspirations have on actual employment, but they do provide evidence about whether they might be able to account for a significant proportion of the differences in employment.

The analyses reveal that race and sex differences in aspirations are consistent with race and sex differences in actual employment among adults. The race differences in aspirations are small compared to differences in field of employment, but they appear to increase with age. The races are more different in orientation to work at the end of high school than at the beginning and the bit of data available here for orientation among young adults suggests that the races continue to diverge during the years just after high school and as youngsters enter the labor force. Sex differences are striking at all ages. All race and sex groups become more realistic with age in the sense that aspirations for fantasy occupations such as athlete and stewardess decrease and there is a net downward shift in aspirations from the professions towards those occupations such as clerical and manual work which offer a substantial proportion of actual employment.

Although blacks and women are less interested in entrepreneurial work than are white men, and even though the gap increases with age, it is noteworthy that only a small proportion of even white male adolescents show interest in entrepreneurial work. Whereas this research began with the hypothesis that a low interest in entrepreneurial work among blacks and females

helped explain their underrepresentation in that type of work, the results focus attention instead on why it is that so many white men are employed in entrepreneurial work despite an apparent low interest in it among adolescents and why they seem to develop interests in it but women and blacks do not. In short, the results are consistent with the original hypothesis about race and sex differences in employment corresponding to differences in aspirations, but the results clearly show that hypothesis to be too simple-minded.

Speculations About How Aspirations Change

On the basis of the data presented here and elsewhere, the following speculations are presented about how people adjust their occupational goals in ways that help perpetuate occupational segregation. Naturally, these speculations can tell only part of the story of how segregation by type of work is maintained--society still imposes obstacles which people do not internalize or accept. But by piecing the present results together with other evidence and speculation about career development, the following five principles emerge to explain how individuals become implicated in the process of their own segregation.

First, there are society-wide stereotypes about what are good jobs, and the occupational aspirations of children mirror these stereotypes. People of all ages appear to share the same stereotypes about what workers in different fields are like (O'Dowd & Beardslee, 1960, 1967; Marks & Webb, 1[illegible] and about the general desirability of different occupations (Hodge, Siegel, & Rossi, 1964; Plata, 1975; Fossum & Moore, 1975). Most children aspire to the jobs commonly perceived as the most desirable jobs, a phenomenon referred to by vocational pschologists as a lack of realism (Crites, 1969).

Second, these society-wide stereotypes differ enormously by sex and reflect widely-held conceptions of what are appropriate roles for the two sexes. The "best" jobs for men are in science and the professions; the "best" jobs for women and in teaching and nursing (Tibbetts, 1975; Shinar, 1975). Very early aspirations often include glamour jobs such as model, actress, athlete, and airplane pilot, but these largely disappear during adolescence.

Third, these early stereotypes are largely the same for all racial and ethnic groups (c.f. Kuvlesky, Wright, & Juarez, 1971), although they do vary in ways which reflect the special difficulties or opportunities of a social group. Postal worker, for example, has sometimes been found to be a common aspiration of young black males (Witty, Garfield, & Brink, 1941), probably because blacks are disproportionately employed in this occupation (see Table 1). These relatively isolated variations also exist for different geographic regions and communities (Gray, 1944). But adherence to the society-wide sex roles is the dominant influence on early aspirations of both blacks and whites.

Fourth, as children go through adolescence, their aspirations become more realistic. They have thought more about their own abilities and interests and have learned more about what kinds of work exist. And most importantly, they begin to recognize more clearly what sorts of jobs people actually have. As they face this reality they develop expectations about which jobs they probably can and cannot get and their aspirations come to resemble their expectations more closely. This process of lowering aspirations occurs for all race and sex groups because people in all social groups face barriers of one sort of another.

The process of adjusting aspirations to reflect more realistic possibilities proceeds throughout the years preceding labor force entry and into early careers. This is quite clear from data on the aspirations and employment for young white men. We find that distributions of aspirations at age 16 diverge markedly from the actual employment patterns of adult white men, but there is a steady evolution in the distribution of aspirations which eventually culminates in the convergence of the distributions of aspirations and employment (Gottfredson, 1978; Flanagan, et al., 1971). Realistic adjustment to one's own abilities and opportunities is also evident in the science to non-science shift in majors that occurs among college students (Astin & Panos, 1969).

And fifth, the patterns of adjustment differ systematically by both race and sex. During this adjustment process, socialization of the races and sexes produces an increasing divergence in aspirations. The process for white men is described first.

Young white males generally aspire to the best jobs that are widely considered appropriate for males, that is, many aspire to the professions. As many of these boys realize that they do not have the academic ability, the interest, or the opportunity to enter these occupations they begin to consider other jobs. The two major alternatives generally considered appropriate for their sex, which have at least moderate levels of prestige and which employ large numbers of men, are the skilled trades and work in sales and management. Of these two, managerial and sales jobs are on the average higher in status and pay and are more likely to be considered the best of the two alternatives. And we do indeed find a steady growth in interest in such work. In the research cited above for young white men (Gottfredson,

1978), the proportion of young men aspiring to sales and management work steadily rises from 12% at age 16 to over 30% by age 28 and that for science and medicine falls from 27% to under 10%.

In contrast, many women--both black and white--initially aspire to teaching and nursing, the stereotypical "best" jobs for women. As women adjust their aspirations, they begin to more often consider clerical work, which is the major source of employment for women. One reason that women by choice fall back to clerical rather than managerial work is that--as currently structured--clerical work demands less career commitment and is more easily reentered after a period of non-employment. In addition, entrepreneurial work often places women in positions of dominance over male workers, which is often considered inappropriate in terms of current sex roles. Neither are women likely to pursue blue-collar work, which is not only considered "inappropriate" for their sex, but is also considered lower in status than clerical work by many people.

Black males begin adolescence with essentially the same aspirations as do white males. But when they abandon their initial high aspirations, they are likely to consider not management and sales, but social service and education if they are highly educated and the skilled trades or other blue-collar work if they are not so well educated. They are unlikely to consider one enormous pool of white collar jobs--clerical work--because it is at the present time generally considered "women's work" although it is of higher status than the manual jobs that many of the men eventually take.

One major reason that black men may not seriously consider sales and management is that they expect racial hostility and interpersonal strain when they try to manage or persuade whites. In addition, a 1964 survey of predom-

inantly black colleges in the South suggests that they perceive more discrimination in such work than in other fields (Fichter, 1967). Freeman (1974) points out that companies began to recruit at predominantly black colleges only in the late 1960's, and several studies show that income gaps between blacks and whites are especially large in business and management (Sharp, 1970; Hauser and Featherman, 1974).

Differences in socialization and family circumstances may also be important because business careers are not as clearly linked to the educational system as are the professions and semi-professions. Access to business careers is more intimately tied to the development of skills, values, and job information through informal contacts with family and friends. For example, Astin and Panos (1969) found that parents' income and a father being in business were associated with college students choosing business majors. Other research suggests that men in high-level sales and management are distinguished from men in other fields of high-level work by one or more of the following factors: being relatively less educated, having lower academic ability, and being from higher status families (Gottfredson & Brown, 1978b). Blacks have fewer role models in management; and they have fewer friends and relatives who can provide them information about job openings and who can pass on to them the special non-academic capabilities and world view possessed by high-level salesmen and managers. In other words, when white males abandon their aspirations for professional work, they turn to their reservoir of entrepreneurial contacts and skills; black men seldom have such resources.

The adjustments to reality and the race and sex differences in occupational aspirations have been documented in many studies. What is new in the

speculation presented here is the suggestion that these adjustments are patterned, that they vary systematically, first by sex and then by race. This explanation of the underrepresentation of women and blacks in entrepreneurial work is oversimplified but it does have some important implications for designing research and social policy. We should know more about how people get into and succeed in entrepreneurial work and we should look for the special problems that blacks and women may face in such work. And finally, although we can expect policies which are designed to improve the academic achievements of women and blacks to increase their representation in some types of high-level work, we must be more skeptical about the usefulness of these policies for changing the patterns of employment in entrepreneurial work.

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Table 1

Percentages of Workers in Selected Occupations

Who Are Women and Who Are Black (1970)

Occupation	% Who Are Women	% Who Are Black
TOTAL	38	10
Professional, Technical	40	5
Engineer	2	1
Physicist	4	1
Lawyer	5	1
Physician	9	2
Accountant	25	2
Psychologist	36	4
Teacher	70	8
Librarian	79	6
Nurse	97	8
Managers & Administrators	17	3
Sales Workers	39	3
Clerical Workers	74	7
Postal Clerk	30	22
Bank Teller	86	4
Secretary	98	3
Craftsmen	5	6
Operatives	31	13
Laborers	8	20
Service Workers	61	21
Police Officer	4	7
Cleaning Service workers	32	27
Health Service workers	88	22
Farmers, Farm laborers	10	8

SOURCE: U.S. Bureau of the Census. 1970 Census of Population: 1970 Subject Reports. Occupational Characteristics. Washington, D.C.: U.S. Government Printing Office, 1973, Table 38, pp. 582-592.

Table 2

Percentage of People Unable to Name Any Things to be Considered When Choosing a Job and Median Number of Things Mentioned by Those Mentioning at Least One[a], by Sex, Race, and Highest Educational Level (Years) of Parents

	White Males			Black Males			White Females			Black Females		
Parents' Education:	≤12	13+	Total	≤12	13+	Total	≤12	13+	Total	≤12	13+	Total
Percentage Unable to Name Any												
Age 13	6.2	3.9	5.1	19.5	16.0	18.5	3.6	2.5	3.0	28.2	17.5	24.1
Age 17	2.7	0.5	1.5	13.6	19.2	15.5	0.6	0.5	0.6	6.1	3.5	5.3
Adult	2.3	0.0	1.6	10.2	4.4	9.2	2.2	0.3	1.6	9.8	0.0	8.7
Median Number of Things Mentioned by Those Mentioning At Least One												
Age 13	4.8	5.3	5.0	2.9	3.7	3.2	4.9	5.4	5.2	3.3	3.9	3.6
Age 17	6.6	7.4	7.1	3.8	5.8	4.3	6.7	7.2	7.0	4.4	5.3	4.7
Adult	7.7	8.6	8.1	5.6	7.8	5.9	6.7	8.5	7.2	4.9	6.9	5.1
Unweighted (N)												
Age 13	(877)			(141)			(901)			(171)		
Age 17	(1028)			(148)			(1056)			(134)		
Adult	(836)			(77)			(944)			(123)		

[a] Respondents were asked to list 10 things to be considered.

Table 3

Percentage of People in Three Age Groups Mentioning Different Factors to Consider When Choosing a Job,[a] By Sex and Race

Factors to Consider	Age	White Male	Black Male	White Female	Black Female
Responsibility, challenge	13	12	9	10	5
	17	15	12	15	15
	Adult	20	18	21	10
Personal satisfaction, interest	13	71	38	79	57
	17	85	75	91	71
	Adult	72	65	78	59
Prestige, opportunity for advancement	13	10	6	9	7
	17	34	19	25	13
	Adult	58	42	53	31
Availability of job	13	10	2	11	1
	17	29	14	27	15
	Adult	53	38	36	14
Duties	13	17	18	13	17
	17	14	14	10	16
	Adult	13	9	9	17
Working conditions, pay	13	93	82	89	75
	17	96	80	93	79
	Adult	94	88	94	78
Job qualifications	13	36	32	43	41
	17	48	38	60	53
	Adult	43	29	54	34
Personal abilities	13	38	34	58	33
	17	41	50	60	46
	Adult	40	32	50	38
Interpersonal relations	13	27	9	30	21
	17	30	15	35	19
	Adult	32	21	24	17
Unweighted (N)	13	(877)	(141)	(901)	(171)
	17	(1028)	(148)	(1056)	(134)
	Adult	(836)	(77)	(944)	(123)

[a] Respondents were asked to list 10 things to consider and NAEP then grouped responses into the general factors listed in this table. People who were unable to mention anything were excluded from the calculations for this table.

Table 4

Percentage of Students[a] Aspiring to Occupations of a Given Level or Higher, By Sex and Race

(Cumulative Percentages)

Percentage Aspiring to this Level or Higher	Age 13				Age 17 (in school)			
	White Males	Black Males	White Females	Black Females	White Males	Black Males	White Females	Black Females
All Students								
Professional	37	35	42	30	37	27	28	28
Semi-Professional	64	67	80	79	60	64	66	68
Skilled	87	90	95	95	89	92	92	92
Housewife, Military	90	91	99	98	91	97	97	94
Semi-Skilled	97	97	99	99	97	99	99	98
Unskilled	100	100	100	100	100	100	100	100
Unweighted (N)	(662)	(127)	(813)	(158)	(751)	(110)	(783)	(120)
Students Whose Parents Have Had 12 or Fewer Years of Education								
Professional	29	38	37	36	24	27	18	29
Semi-Professional	57	73	76	77	48	67	54	73
Skilled	86	86	93	91	85	94	88	90
Housewife, Military	88	87	99	97	87	98	95	92
Semi-Skilled	97	95	99	99	96	100	99	97
Unskilled	100	100	100	100	100	100	100	100
Unweighted (N)	(293)	(68)	(399)	(84)	(334)	(79)	(382)	(72)

[a]Students not expressing an occupational aspiration are excluded.

Table 5

Occupational Aspirations of 13-Year-Old and 17-Year-Old Students, By Sex and Race

(Percentages)

	Age 13				Age 17 (in school)			
	White Male	Black Male	White Female	Black Female	White Male	Black Male	White Female	Black Female
Professional								
Lawyer	4.6	6.1	1.9	1.4	2.4	0.9	2.0	0.9
Physician	10.1	10.8	12.2	11.9	7.9	10.5	3.2	5.4
Natural scientist	9.0	8.1	1.5	0.0	9.3	0.8	1.6	0.9
Teacher	2.6	2.3	21.0	13.3	3.6	4.8	11.8	7.5
Writer	1.5	2.8	1.3	1.6	1.5	3.3	1.3	1.5
Other Professional	8.2	1.9	2.8	0.4	9.4	5.6	5.7	10.6
Semi-Professional								
Social Worker	0.4	4.2	3.5	2.1	2.1	0.4	3.4	2.2
Nurse	0.2	1.3	17.0	26.3	0.7	1.0	13.7	16.7
Manager, owner	4.7	1.3	1.3	0.7	5.8	3.6	3.3	0.0
Medical technician	0.0	0.0	1.5	0.0	1.0	1.1	3.0	5.1
Other technician	2.2	1.3	0.5	0.7	2.9	12.4	1.9	1.3
Artist, musician	3.5	4.2	3.4	7.3	4.4	6.0	4.0	6.6
Stewardess, model	0.2	0.4	7.1	7.5	0.0	0.0	3.7	5.2
Athlete, coach	14.1	16.3	3.4	2.3	4.8	9.8	1.8	0.0
Skilled								
Clerical worker	0.1	0.0	10.2	12.8	0.3	0.0	18.7	14.2
Sales worker	0.5	0.3	0.3	0.0	1.0	0.9	0.7	2.8
Craftsman, mechanic	13.3	13.7	0.0	0.0	16.6	25.7	0.2	0.0
Farmer	3.5	0.0	0.5	0.0	2.5	0.0	0.6	0.0
Protective service	5.3	6.5	1.2	2.3	5.7	0.0	1.0	0.6
Barber, hairdresser	0.2	0.0	1.6	0.0	0.2	0.0	2.1	4.5

Table 5 continued...

	Age 13				Age 17 (in school)			
	White Male	Black Male	White Female	Black Female	White Male	Black Male	White Female	Black Female
Semi-Skilled								
Operatives, medical attendant	6.9	5.4	0.2	1.3	4.9	1.9	1.5	3.6
Unskilled								
Laborers, other service	2.7	2.4	1.3	0.7	3.1	0.9	0.8	2.5
Military	2.6	1.3	0.3	1.0	2.1	5.1	1.2	1.9
Housewife	0.0	0.0	3.4	2.1	0.0	0.0	3.6	0.0
No acceptable response	2.9	9.5	2.3	4.0	7.3	5.3	8.7	5.7
Total	99.3	100.1	99.7	99.7	99.5	100.0	99.5	99.7
Unweighted (N)	(710)	(141)	(834)	(164)	(804)	(114)	(828)	(127)

Note: The percentages in this table differ slightly from those in Table 4 because Table 4 excludes students not giving an acceptable response but this table includes them.

Table 6

Percentage of 13-Year-Olds and 17-Year-Olds[a] Mentioning Different Things About Their First Job Choice That They Like or Dislike[b], By Sex and Race

Factors About Job Choice	Age	White Male		Black Male		White Female		Black Female	
		Like	Dislike	Like	Dislike	Like	Dislike	Like	Dislike
All Students									
Responsibility, challenge	13	17	8	14	8	15	7	16	7
	17	17	6	16	5	17	8	23	4
Duties	13	58	39	46	34	51	39	52	28
	17	54	39	52	28	51	35	53	23
Conditions of work	13	31	39	23	27	13	31	8	16
	17	48	49	44	32	28	38	23	35
Interpersonal relations	13	18	11	13	12	33	23	23	19
	17	24	13	18	10	45	2[illegible]	38	21
Helping people	13	13	5	23	6	40	14	36	12
	17	16	5	19	3	28	8	37	7
Unweighted (N)	13	(747)		(139)		(858)		(146)	
	17	(856)		(132)		(892)		(127)	
Students Whose Parents Had 12 or Fewer Years of Education									
Responsibility, challenge	13	15	8	15	7	11	6	14	9
	17	18	4	14	1	16	8	20	5
Duties	13	60	40	44	33	53	36	54	31
	17	52	44	57	28	52	34	55	22
Conditions of work	13	31	38	24	26	11	28	7	15
	17	50	45	47	34	29	36	21	34
Interpersonal relations	13	16	9	8	10	34	23	19	14
	17	19	14	18	11	42	27	38	19
Helping people	13	9	4	25	9	36	14	30	10
	17	12	2	18	3	23	8	36	5
Unweighted (N)	13	(391)		(96)		(457)		(102)	
	17	(399)		(99)		(448)		(83)	

[a]Only 17-year-olds still in school are included.

[b]Respondents were asked to name three factors they like and three factors they dislike.

Table 7

Percentage of Adults Mentioning Selected Job-Related Abilities That They Possess or Do Not Possess Which They Think They Should Consider When Selecting a Job, By Sex and Race

Abilities to Consider	Possess				Do Not Possess			
	White Males	Black Males	White Females	Black Females	White Males	Black Males	White Females	Black Females
Specific Abilities								
Professional, technical	16	10	10	7	8	10	7	4
Art, Music	2	0	2	2	1	0	0	2
Health service	1	1	5	12	1	3	2	5
Management	9	6	2	2	3	0	3	1
Clerical, office	4	4	43	27	3	2	32	19
Business, sales	10	3	6	1	5	2	5	5
Manual, mechanical	22	18	2	2	7	9	1	1
Operative	15	12	5	7	3	1	1	3
Service	2	1	9	12	0	1	1	1
General Abilities								
Interpersonal	10	3	13	5	4	0	4	5
Intellectual	10	6	7	5	5	0	2	4
Personal qualities	12	11	11	15	12	0	10	9
Education/experience	22	26	18	17	32	22	27	18
Unweighted (N)	(860)	(82)	(966)	(129)	(860)	(82)	(966)	(129)

Table 8

Jobs Held By Adults Aged 26-35, By Sex and Race

(Percentages)

	White Men	Black Men	White Women	Black Women
Professional, technical	21.3	4.9	10.8	14.1
Art, music	1.1	0.0	1.2	2.4
Health service	2.3	0.6	2.8	3.6
Management	25.7	10.1	6.2	11.1
Clerical	4.3	8.1	15.2	16.5
Sales	5.3	5.8	1.9	0.0
Craftsmen, mechanics	19.0	17.9	1.4	0.0
Operative	10.6	23.5	4.8	14.2
Service	4.5	13.5	8.0	18.1
Laborer	3.1	9.2	0.7	0.0
Military	0.4	2.9	0.0	0.0
Housewife	0.5	0.0	46.3	18.8
Unacceptable	0.7	3.5	0.2	0.9
Unweighted (N)	(845)	(79)	(843)	(111)