

Center for Demography and Ecology
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RECENT DEVELOPMENTS IN THE WISCONSIN STUDY OF
SOCIAL AND PSYCHOLOGICAL FACTORS
IN SOCIOECONOMIC ACHIEVEMENT

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CDE Working Paper 76-11

Prepared for the Jerusalem Seminar on Social Mobility and Stratification, April 1976, under the auspices of the Research Committee on Social Stratification, International Sociological Association. This research was supported by a grant from the National Institute of Mental Health (M-06275).

April 1976

Introduction

The Wisconsin Study of Social and Psychological Factors in Socio-economic Achievement is a longitudinal study of a random sample of more than 10,000 persons who originally were seniors in Wisconsin high schools in 1957. The early phase of the research was devoted to a detailed examination of the influence of socioeconomic background and of social psychological characteristics and experiences on educational and occupational aspirations. The data for these studies came from a questionnaire the students completed late in their senior year in high school and from school and public records. On the basis of our earlier work (Sewell, Haller, and Straus, 1957), the results of which were later confirmed by others, we were convinced that both socioeconomic origins and academic or mental ability were major factors in the educational and occupational aspirations of youth. We knew, also, from our previous research that females tended to have lower educational and occupational aspirations than males. Consequently, in all of our subsequent analysis we took the influence of sex, ability, and socioeconomic status into account in assessing the effects on aspirations of other variables, such as community and neighborhood characteristics, grades in school, and the influence of significant others. Most of this analysis was done using cross-tabulation procedures. Several articles were published, based on this research, which indicated that community and neighborhood have real but relatively small effects on educational and occupational aspirations after socioeconomic origins and measured ability are taken into account (Sewell, 1963,

1964; Sewell and Armer, 1966a, 1966b; Sewell and Haller, 1965, 1967; Sewell and Orenstein, 1965; Portes, Haller, and Sewell, 1968). Most of the community differences proved to be effects of rural origins and, particularly, of farm origin. Recently, we have confirmed and extended these findings about communities and neighborhoods in a detailed analysis of educational differences among the graduates of more than 400 Wisconsin high schools (Hauser, Sewell, and Alwin, 1976).

Our examination of the influence of significant others on aspirations showed that both father's and mother's educational attainments have a strong effect on the aspirations of their sons and daughters (Sewell and Shah, 1968a). We also found that the youth's perception of parental expectations has a very powerful influence on aspirations (Sewell and Shah, 1968b). Other analysis showed that teachers' expectations are less important, but still significant, and the influence of peers, although more important than teachers' influence, is not as great as that of parents (Sewell, 1964; Sewell and Hauser, 1972; Hauser, 1972). All of these relations held when the effects of socioeconomic background, measured intelligence, and sex were taken into account. Path analysis revealed that the encouragement of significant others is a powerful factor in educational and occupational aspirations because it mediates much of the effect of social background and because of its direct influence on these aspirations (Sewell and Shah, 1968b).

In 1964, we did a follow-up study of the educational and occupational attainments of the members of our sample; the response rate was 87 percent. Our early analysis of these data clearly demonstrated that both socioeconomic origins and measured ability have direct influences on educational achievement and indirect influences that are mediated by aspirations (Sewell and

Shah, 1967). Encouraged by our earlier results and by the work of Blau and Duncan (1967), we decided to construct a causal model of educational and occupational achievement. We knew that socioeconomic origins have marked effects on educational and occupational achievements. We also had evidence from our research that such social psychological factors as ability, grades, significant others' encouragement, and aspirations are likely to be among the most important variables through which background characteristics influence later achievements. Moreover, we had evidence that all of these social psychological variables would have effects of their own, quite independent of background. The model, frequently referred to as the "Wisconsin model" (Sewell, Haller, and Portes, 1969; Sewell, Haller, and Ohlendorf, 1970; Haller and Portes, 1973), shows that socioeconomic status has no effect on grades in high school independent of academic ability, but has strong direct and indirect effects on significant others' influence, and on educational and occupational aspirations, and through these on educational and occupational attainments. The role of academic ability is somewhat different in that it has strong direct effects on high school performance, independent of socioeconomic status, and direct and indirect effects on significant others and on educational and occupational aspirations, and through these on educational and occupational attainments. This model explains 57 percent of the variance in post-high school educational attainment and 40 percent of the variance in early occupational attainments for the males in our sample; the percentages are a little lower for females (Sewell, 1971).

We further elaborated our model by disaggregating socioeconomic status into its component parts: parents' income, mother's education,

father's education, and father's occupation, and by decomposing significant others' influence into parental encouragement, teachers' encouragement, and peers' plans (Sewell, 1971; Hauser, 1972; Sewell and Hauser, 1972, 1975). We also extended the model to include earnings as the final dependent variable. This enabled us to estimate the role of each of these variables in the socioeconomic achievement process.

This model has been highly successful in illuminating the complex process by which the effects of each of the socioeconomic background variables and ability are mediated by social psychological experiences. About 75 percent of the total effect of each socioeconomic status variable of education and occupational attainment is mediated by the social psychological variables. Moreover, each of the socioeconomic variables continues to have some direct influence on educational and occupational attainments. The total associations of each of the socioeconomic background variables with these attainments are very similar. The socioeconomic status variables have little influence on academic ability, but ability has a very marked effect on educational and occupational achievements, both directly and as mediated by social psychological experiences. The separate effects of the significant-other variables on educational and occupational achievement are interesting. Parents and peers have effects of about the same magnitude but teachers' influence is much less important in determining aspirations and achievements; on the other hand, parents' and peers' encouragement are quite dependent on the youth's socioeconomic background, whereas teacher's encouragement depends mainly on the student's academic ability, particularly as validated by school performance.

This model has also been applied to the women in our sample but

with somewhat less success, in that it tends to "over predict" their achievements (Sewell, 1971). Women are most seriously disadvantaged, compared to men, in levels of teachers' and parents' encouragement and in their own levels of educational aspirations but they have small advantages in high school grades and in occupational aspirations.

Our model has greatly increased our understanding of educational attainment and also of early occupational attainment, primarily because it does so well in explicating the educational attainment process. Unfortunately its usefulness in explaining earnings is quite limited; depending on what sub-sample we use we can explain somewhere between 8 and 14 percent of the variance in 1967 earnings (Sewell and Hauser, 1972, 1975; Yang, 1975). This is, of course, not surprising because the model was designed primarily to explain educational attainment; it does not include any variables, other than early occupational attainment, relating to post-school experiences. However, the model is useful in interpreting the effects of each of the socioeconomic background variables and of academic ability on earnings. The major indirect effects of background are from the socioeconomic status characteristics through education and occupation to earnings, but there is also a strong effect of parents' income on earnings which is independent of all other variables in the model. Also, there is a direct effect of father's occupation on son's occupation, which in turn is an important determinant of son's earnings. The effect of ability on earnings is also important but is largely mediated by educational and occupational attainments.

Another reason for our limited explanation of earnings was the comparative youth of our sample (Mincer, 1974). In 1965 to 1967, the

period on which our published analyses have focused, only 8 to 10 years had elapsed since high school graduation. For this reason many of the college-educated members of the sample were still in school, were completing military service, or had just entered the civilian labor market. Thus, the sample was truncated at the top of the distribution of potential earnings, and among persons with earnings, schooling and labor market experience were strongly negatively correlated. With the cooperation of the Social Security Administration we have extended our personal earnings histories through 1971, and our preliminary analyses of annual cross-sections show a regular pattern of growth in the effects of schooling and ability on earnings (Hauser and Daymont, 1976). However, in the more recent period the effects on earnings of other social psychological factors are still mediated almost completely by the length of schooling.

Fortunately, our research has drawn the interest of other investigators, and several of our results have been tested or replicated in independent samples (Alexander, Eckland, and Griffin, 1975; Wilson and Portes, 1975; Hout and Morgan, 1975; Alexander and Eckland, 1975; Kerckhoff, 1974; Alwin, Otto, and Call, 1976; Yuchtman and Yitzhak, 1975; Gilbert, 1973; Garnier and Hout, 1974). We have been impressed with the similarity of findings in comparable populations where replicate measurements were obtained. At the same time comparisons between races or social settings have pointed to interesting lines for further inquiry.

With the completion of our analyses of the earnings of young men we became increasingly aware of the limitations of our models and intrigued by the potential of a new round of survey data. For example,

we had no data on the earnings of women in our sample, nor did we have the information about marriage and childbearing which would permit us to interpret women's labor force and occupational careers. We had been expecting to obtain updated earnings histories for men in the sample from the Social Security Administration, but even for the period up through 1967 we had very little information about the proximate sources of variation in earnings. For example, we knew men's occupations and residential locations only in 1964. We did not know the exact timing of military service, nor could we pinpoint the termination of schooling for men who were in school as late as 1964. We had very limited information about vocational training, on-the-job training, or civilian labor market experience. Finally, aside from the extension and enrichment of our earlier models, the collection of a new round of survey data opened new areas of inquiry. For example, we have extended our interest in the consequences of schooling to include a variety of job characteristics, aspirations for self and children, and several aspects of social participation. Also, we have improved our ability to measure both the effects of the family of orientation and of adolescent friendship patterns. In the following section we shall describe several of these features of our study design.

The 1975 follow-up survey

Because of our great interest in post-1964 school, work, and family experiences, we undertook a follow-up survey of the members of our sample during 1975. Early in 1974 we started to locate the persons whose parents had responded in 1964. In almost all of these cases we had ascertained the 1964 name and street address of the young man or woman, as well as that of the parents. Using this information we began

a search for the current address and telephone number. In order to avoid unnecessary contact with our intended respondents we began the tracing effort with the parents, and we only contacted the respondent directly when our original effort had failed. With an initial search of telephone directories for the parent or respondent (and some operator assistance), we were able to confirm the location of 81 percent of the persons covered in the 1964 survey by local or long-distance telephone calls. To locate the remaining persons we tried a variety of other potential informants--employers, unions, professional boards or associations, high schools, colleges and alumni associations, neighbors, same-named persons in the same town, local post offices, military locator services, and other members of the same high school class.

Ultimately, we located 99 percent of the 9,007 persons for whom responses had been obtained in the 1964 survey. Encouraged by these results we enlarged the study to include 1,310 members of the 1957 sample for whom no response had been obtained in 1964, and we were successful in locating 86.2 percent of these persons. In total the 1974 tracing operation located 97.4 percent of the original members of the sample. Our tracing methods have been described in more detail by Clarridge, Sheehy and Hauser (1976). An important feature of the search process was the subdivision of the total sample into highly stratified random tenths. These were entered into the search process sequentially. This smoothed the flow of work, encouraged a division of labor between expert and inexperienced searchers, and prevented a pile-up of hard-to-find cases at the end of the tracing process.

Prior to and concurrent with the search operation, we developed and pretested an interview schedule to be used in obtaining the necessary

information from our sample members. Because of our success with telephone interviews in the closing phases of the 1964 follow-up we decided to do the 1975 follow-up by telephone. While the survey instrument necessarily contained some unique material, we drew heavily on U.S. Census measurement concepts and methods, on items which had been used successfully in the two OCG surveys (Blau and Duncan, 1967; Featherman and Hauser, 1975), and on other commonly used survey items. In this way we tried to obtain both a high degree of validity and of comparability in our data. After several preliminary revisions, we settled on an instrument which was pretested on persons from the 1957 Wisconsin high school graduating class who were not sample members. This was highly successful in demonstrating that the interview could be done by telephone: the response rate was excellent; the quality of information obtained from the respondents was high; and most respondents found the interview to be an interesting experience. The average interview took about 45 minutes.

We then contracted with the Wisconsin Survey Research Laboratory (WSRL), a responsible and highly professional survey research organization on the Madison campus, to do the production interviewing. We helped to train the interviewers, most of whom were experienced, in the use of our interview schedule. We supplied WSRL with pre-addressed introductory letters and with computer-printed face sheets which contained the telephone number, name, address, and other necessary identifying information for each sample member. These were supplied in random lots of approximately 1,000 to guard against any tendency to do the easy interviews first and leave the tougher ones until the end. We maintained a staff of expert tracers to relocate respondents who had moved and could not easily be located

by the interviewer. The interviewers were monitored by experienced survey supervisors, and each completed schedule was edited by the interviewer and by a member of WSRL's editorial staff.

Occupational information is of great importance in our study. An average of 10 occupation-industry-class of worker entries were obtained in each completed schedule, and as many as 20 could have been reported in some cases. For this reason we trained each interviewer in the coding of job descriptions into 7 digit 1970-basis codes of the U.S. Bureau of the Census, and we trained and supervised our own staff of occupation-industry coders. These items were pre-coded immediately after WSRL's edit, and the flow of work was organized so the several job descriptions in each questionnaire would be coded independently. That is, we avoided any tendency of coders to impose a specious consistency on responses. Schedules which failed either WSRL's edit or our pre-coding edit were returned to the field. The remainder of the coding was completed by trained WSRL personnel, using coding guides designed by our research staff.

Using these procedures we obtained interviews with 95 percent of all persons for whom we had telephone numbers. For all 1957 sample members not known to be dead, too disabled to be interviewed, or living outside the United States, our response rate is 91.4 percent. The response rate is slightly higher for females than males, 92.3 percent and 90.5 percent respectively. The response rate is 93.5 percent among persons whose parents responded in 1964 and 77.0 percent among 1964 nonrespondents; this differential is mainly a result of tracing failure among the 1964 nonrespondents. Because of these high response rates, we are certain that our 1975 sample accurately represents the population from which

it was drawn (within the limits of sampling variability).

The 1975 survey covered many matters of importance in the lives of our respondents. At this time, we shall mention only those aspects most important for our future analysis plans which were not covered in the 1957 or 1964 surveys. They include (1) composition of family of origin: age, sex, and education of each sibling, the occupation and address of a randomly selected sibling and the parents' ethnic and religious background; (2) the education of the respondent: content, timing, and location of all post-secondary schooling, including vocational, collegiate, and military schooling; (3) labor force experience: dates and types of military service, first civilian job, occupation in 1970, current (1975) job, longest job in 1974, earnings in 1974, weeks and hours worked, location, size, and type of work organization, work satisfaction, work authority, occupational aspirations, labor force participation and jobs held before marriage and in each birth interval (women only); (4) characteristics of family of procreation: marital status, marital history, a roster of children by age and sex, and educational and occupational aspirations for a randomly selected child; spouse's work status, education, occupation, and 1974 earnings; (5) selected retrospective information: aspirations while in high school and names of best high school friends; (6) social participation: membership in organizations, church attendance, visiting behavior, voting.

All of these data are now coded onto magnetic tapes and are being edited in preparation for merger with our existing data files, which already contain the information from the 1957 survey, the 1964 resurvey, and from Wisconsin tax files and other public records. We are currently

negotiating with the Social Security Administration to have the resulting file merged with earnings data for the period 1957 to 1971.

Only the Social Security Administration can make the latter merger because of the agreement we have with them which assures the anonymity and privacy of information on individuals. Because of recent federal legislation to safeguard the secrecy of individual information in federal agency files, it is not at all certain that the responsible administrators in the Social Security Administration will agree to this merger, although we believe that our procedures adequately meet the privacy requirements of the current legislation. It is even less certain that the Social Security Administration will provide us with earnings information for future years under an agreement that will enable us to carry out the kinds of analysis we believe to be maximally useful.

Analysis of the new data

We have ambitious plans for the analysis of our new data but our presentation of these plans must be brief and illustrative rather than detailed and exhaustive.

One of the earliest tasks we will undertake will be to estimate our structural equation models using data from the 1975 survey. We shall examine first the basic model which includes only the socioeconomic variables, mental ability, educational achievement, occupational attainment and earnings, and, second, the social psychological model which also includes grades in high school, measures of social influence, and educational and occupational aspirations. We shall be particularly interested in learning what changes will have occurred in the effects of socioeconomic background, ability, and other variables on current education,

occupation, and earnings.

We expect these analyses will replicate, test, or extend our earlier analyses and interpretations. For example, in the 1975 survey we have more detailed reports of parental education and occupation than were earlier available to us, and we think these items will be useful in testing our earlier findings about the relative importance of various aspects of social background. For some background characteristics we now have multiple reports from the 1975 survey and from earlier surveys or public records, and we shall use these to assess the effects of response error on our findings (cf. Bielby, Hauser, and Featherman, 1976). Similarly, with the updated reports of schooling we shall be able to test and refine our earlier estimates of the effect of schooling on occupations and earnings. We have remeasured levels of educational and occupational aspirations and social influences on those aspirations during high school. We expect the recollection of these variables is affected to some degree by recent experience, but we believe it will still be possible to use the original and remeasured items to assess the effects of response error in those items on our earlier findings.

We have occupations (and, hopefully, earnings) measured at several points in time: first full-time civilian occupation; 1964, 1970, and 1975 occupations; (and earnings in 1965 through 1971 and 1974). By estimating equations with these successive dependent variables we shall be able to trace life-cycle changes in the influence of ability, aspiration, schooling, and social background. Moreover, we shall combine these several variables in a model of the socioeconomic career (Blau and Duncan, 1967: 177-188; Featherman, 1971, 1973; Kelley, 1973a; 1973b) which may permit us to test recent theories of growth in occupational status and earnings (Sørensen, 1975: 70-78; 1976a; 1976b).

We also plan to develop revisions of our models using additional background information that will be available to us for the first time. We now have information on racial and ethnic background, religion, intact family, sibship size and composition which may be added to our existing models. For example, we shall be able to measure the effect of academic and motivational differences among religious and ethnic groups on the socioeconomic differentials among them.

We shall develop new models to more fully explain current occupational status and earnings. In these models we will use information such as vocational schooling, on-the-job training, control over various facets of the job, years of work experience, type of industry, and labor market situation. In this analysis we shall also examine the effects of such experiences and contingencies as military service, family formation, marital stability, and migration. We shall also extend our analyses to include the determinants of job satisfaction, future aspirations, and orientations to work. When taken in conjunction with our earlier measurements, this may shed further light on the role of ability and motivation in socioeconomic achievement.

We are especially anxious to learn more about women's achievements. In addition to estimating all of our models separately for women and men, we plan to construct models for women which will take into account certain experiences of women which we think complicate their socioeconomic careers. We believe that by using our information on women's marital experiences, pregnancy histories, and employment histories, it will be possible not only to more fully understand their socioeconomic achievements but also, perhaps, to explain sex differences in achievement.

By identifying the 3 best same-sex friends of the respondent in his or her high school, we believe it will be possible to represent the interpersonal influence of peers on aspirations and achievements in a more satisfactory way. In our previous work we have represented peer influence with a single indicator of the perception of friends' college-going plans. This may adequately represent the influence of peers as role-models, but we think it would be more desirable to construct a simultaneous equation model of best friends' aspirations and achievements. There is precedent for this in the important papers by Duncan, Haller and Portes (1968) and by Hout and Morgan (1975). We think a serious effort to replicate and extend these two analyses is justified by the richness of the Wisconsin data and by the size and heterogeneity of the sample. In this analysis we think it may be possible to relate processes of interpersonal influence to the segregation of students among schools by socioeconomic background; this would help to resolve long-standing sociological questions about the interpretation of school differences in aspiration and achievement (Sewell and Armer, 1966a; 1966b; Hauser, Sewell and Alwin, 1976).

Almost all respondents were able to name as many as 3 best high school friends, and we found the names of these friends were described with sufficient accuracy to identify the records of the named persons in the survey population from which our sample was drawn. Because of the sampling process we expect that about one-third of the named persons will be in the Wisconsin panel sample, which implies that of three named persons at least one will be in the sample about 70 percent of the time. That is, we could cover about 70 percent of the sample if we paired each

respondent with the first-named friend who was in the sample. However, we may try to assess the effects of alternative matching rules on our findings, e.g., mutual choices; first, second, or third choices; and pairs including sociometric stars.

The new information we have on family structure will permit us to do an extensive analysis of the influence of age, sex, birth order, sibship size, and child-spacing on educational attainment, while taking into account the complex logical interdependencies among these structural variables and their empirical relationships with socioeconomic status and ability. The great advantage of our data over those used in past studies resides in the fact that we have data both on families and on samples of persons. A second advantage is that we have detailed information on the structural characteristics of each sibship. By using both our data on families and sibling pairs and our information on our sample of respondents, we can overcome the twin problems of the fact that data on families are inherently confounded with temporal changes in the larger society and data on samples of persons risk the confounding of family structural characteristics with other characteristics of the family.

Finally, our data on the educational and economic achievements of a random sample of one like-sexed or cross-sexed sibling of each of our respondents will permit us to do a study of the similarity of siblings. The resemblance of siblings raised together is, of course, a fundamental indicator of the force with which the family functions to create and maintain systems of social differentiation and inequality. Sibling resemblance captures the effects of social and economic background,

of family structure, and of all other commonalities of social and psychological functioning of the family. It is possible to give sibling resemblance an explicit interpretation to the extent that shared familial characteristics have been measured. Our study provides the needed minimal measures of social background, educational attainment and occupational achievement for sibling pairs drawn from a large and representative sample. Hauser (1975) describes the potential use of our data for sibling and family studies in greater detail.

Unfortunately, we do not have data currently on the cognitive ability or the earnings of the randomly selected siblings of our original sample members. This of course will hamper our analysis of sibling resemblance and socioeconomic achievement. We are currently seeking funds with which to launch a study which would obtain more detailed information on the social, educational, occupational and economic experiences of these selected siblings. The study would provide, also, for a record search to obtain scores on standardized ability tests from school records and State Testing Service files. We have carried out exploratory steps that indicate the feasibility of the study. If we obtain the funds to gather these data we will be in a position to do a definitive analysis of the effects of family on socioeconomic achievements.

Future data collection

With the exception of the plans for our survey of siblings, just discussed, we have no fixed schedule for gathering any new field data in the near future. We do hope to be able to work out a feasible arrangement with the Social Security Administration to obtain earnings information on all employed members of our longitudinal sample. We

would like to have annual data on everyone but may have to settle for information at less frequent intervals and only for men. The costs are increasing each year because of search and estimation problems. Moreover, there is no certainty that we can work out a security scheme that will meet the requirements of existing privacy laws or the administrative requirements of the Social Security Administration. If not, we will have to rely on periodic surveys of our respondents perhaps at five year intervals. If we can obtain earnings information from a government source, we may not restudy our sample for another 10 years, until 1985, when our sample members will be about 45 years of age. At that time we will wish not only to learn about their more recent career experiences and their plans for retirement, but will especially want to know about their children's experiences, aspirations, and achievements. Who knows--if either of us lives long enough, we may confront you or your successors at a similar meeting with an achievement model based on longitudinal data covering three generations.

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