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ABSTRACT

Nine papers presented at the conference on Employment Statistics and Youth are presented. Focusing on the meaning of unemployment counts in the U.S., the first three papers are Measurement and Interpretation of Teenage Unemployment in the United States and Other Countries, by Beatrice Reubens; What Do Teenage Unemployment Statistics Measure?, by Orley Ashenfelter; and Youth Participation Rates and the Availability of Jobs, by Francine Blau. Assessing important factors which underlie the employment and unemployment statistics, the next four papers are Family Status and Labor Force Patterns, by Martha Hill; Education, Occupation, and Earnings, by David O'Shea; Alienation and Adjustment to Limited Prospects, by David Gottlieb; and Do Youth Really Want to Work?: A Comparison of the Work Values and Job Perceptions of Younger and Older Men, by Patricia Miller and William Simon. Examining the long-term consequences of the employment experiences of youth, the last two papers are The Relationship between Youth Employment and Future Employability and Earnings, by Wayne Stevenson, and Employment and Earning Patterns: The Dynamics of Change, by David Farber. (LRA)

Supplementary Papers from the Conference on Youth Unemployment: Its Measurement and Meaning

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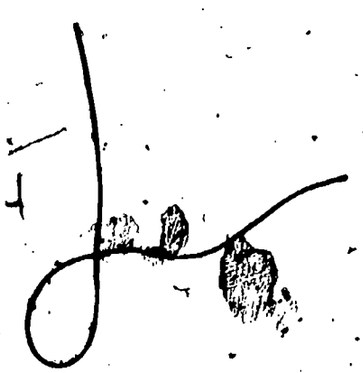

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INTRODUCTION

By: Robert Taggart and Naomi Berger Davidson

The statistical parameters of the youth employment problem are by now a familiar litany. Teenagers account for nearly a fourth of the unemployed, and persons under age 25 represent almost one half, even though they constitute only a tenth and a fourth of the labor force respectively. The rate of unemployment among youth age sixteen to nineteen is two and a half times the overall rate. Two-fifths of black teenagers in the labor force are without jobs.

There is general public recognition, based on such statistics, that youth unemployment is a critical national issue. Yet beyond this recognition, there is little agreement about the actual dimensions of the job deficit, the severity and implications of joblessness, its causes, or the effectiveness of alternative public policies. Libraries have been written about youth employment and unemployment, but the literature raises as many questions as it answers.

One fundamental reason is the inadequacy of our measurement tools and the uncertainties related to their application. The first step in addressing any problem in a "rigorous," "scientific" manner is to develop a set of measuring rods which will realistically appraise the characteristics of the phenomenon, which will aid in assessing its causes, and which will provide a baseline for determining the impacts of interventions. In the employment arena, the statistical system, while extremely sophisticated, was not developed for use in understanding and measuring youth employment problems. The concepts and definitions of "employment," "unemployment" and "labor force" participation were largely derived from the Depression experience, when the primary issue was joblessness among adult breadwinners. The meaning of these terms becomes clouded when applied to persons

with very marginal and fluctuating attachments to the world of work. Interview methods by which the employment and unemployment data are derived may also bias results as they relate to youth, since the head of household who is interviewed may not know about the attitudes and activities of junior members. There are so many other factors involved during the "tempestuous teens" and early twenties that employment characteristics and developments cannot be considered alone.

By the same token, as youth have become an increasing share of the labor force, their inclusion in the overall employment and unemployment statistics have generated uncertainties about the meaning of these numbers. Equal weight is given a sixteen-year-old high school student looking for a 5-hour-a-week job to pay for clothes as is given the unemployed teacher with a family to support. The aggregate data mix "apples" and "oranges", and it is increasingly difficult to determine the implications of any given mixture. Some have argued, for instance, that historically high rates of national unemployment must be tolerated because so many youth are counted in the statistics whose problems are neither serious nor solvable.

A few illustrations quickly suggest some of the differences between adult and youth unemployment which cloud the overall data and make it difficult to assess the data which are available for youth:

- Half of teenagers (sixteen to nineteen) unemployed during the school year are students. This is a dramatic change from the early 1960's when less than a fourth of unemployed teenagers were in school. Among twenty to twenty-four-year-olds, only an eighth of the unemployed are students, and the proportion drops to 7% among twenty-five to thirty-four-year-olds.

- More than a third of sixteen to nineteen-year-olds are part-time job seekers, compared to a tenth of persons twenty-five and over. Teenagers who work average 28 hours of employment weekly compared to the 40-hour average of adults.

- Youth employment and unemployment is very seasonal. From December to July 1977, employment among sixteen to nineteen-year-olds rose by a fourth compared to a tenth for twenty to twenty-four-year-olds while remaining almost constant for

persons twenty-five and over. Youth accounted for 95% of the December to July employment increase.

- Among persons with labor force experience during 1976, three-fifths of sixteen to seventeen-year-olds, two-fifths of eighteen to nineteen-year-olds, and a fifth of twenty to twenty-four-year olds were in the labor force less than half the year compared with only a tenth of older participants.

- Few young persons are breadwinners. Less than a tenth of sixteen to nineteen-year-olds in the civilian labor force are married with a spouse present, compared to two-fifths of twenty to twenty-four-year-olds and seven of every ten twenty-five to thirty-four-year-olds.

- The frequency of entry and exit from the labor force is a major factor in youth unemployment. In 1977, seven of ten unemployed youth were entrants or reentrants into the labor force, compared to less than two-fifths of all unemployed. Similarly, 53% of unemployed teenagers were jobless five weeks or less compared with only 38% of the unemployed age twenty and older.

- For every unemployed youth age sixteen to nineteen, there is another who claims to want a job but is not looking--largely because of school attendance.

- Among employed sixteen to nineteen-year-olds, more than a third earn less than the minimum wage. While some unemployed youth have unrealistic wage expectations, two-fifths claim they would take a job that paid less than the minimum and another fifth would take a job at the minimum. The mean wage for employed sixteen to nineteen-year-old males is less than half that for males twenty-five and over. For persons under age twenty with work experience, mean income in 1976 was only $1600 compared to $4900 for workers age twenty to twenty-four and $8300 for persons age twenty-five to twenty-nine.

- Youth with "serious" problems are a minority of all unemployed youth. Dropouts represent less than a fourth of unemployed sixteen to twenty-four-year-olds, and nonwhite school dropouts only one-twentieth. Only a third of unemployed youth are from poor families, and half from families below the BLS lower living standard. An eighth are from poor, nonwhite families. Likewise, only 6% of jobless sixteen to nineteen-year-olds are among the long-term unemployed (twenty weeks or more) compared to a fifth of adult unemployed.

- The labor force data for youth largely reflect demographic trends. The annual growth rate of the sixteen to nineteen labor force cohort was 3.9% from 1970 to 1975 compared to 2.2% for twenty-five to fifty-four-year-olds. From 1975 to 1980, the growth rate for youth is expected to slow to .8% annually. From 1980 to 1985, the youth labor force is expected to actively decline by 2.8% annually.

- From 1964 to 1970, government employment and training programs and the military accounted for one fourth of the employment growth (including Armed Forces) for sixteen to twenty-four-year-olds. From 1970 to 1976, the decline in the military exceeded the expansion in program enrollments, so that the government sector activity actually reduced employment growth.

These few examples suggest the many considerations in interpreting and applying employment and unemployment statistics regarding youth. The examples are evidence that some data are gathered on these important issues. However, the available statistics are in many cases sporadic and incomplete--adequate to highlight issues but not to address them fully. And in many cases, there are copious data but a great deal of uncertainty about what they mean.

To improve understanding of youth employment problems and programs, it is necessary to begin by improving our understanding of the measurement system, its uses and its abuses. A National Commission on Employment and Unemployment Statistics has been established by Congress to assess all aspects of our labor force statistics, including the problems in applying them to youth. Likewise, the Youth Employment and Demonstration Projects Act (YEDPA), signed by the President on August 5, 1977, provides the Secretary of Labor with discretionary authority to support experimental, demonstration and research activities which will lead to a better understanding of how to improve the employment and earnings of youth. One of the first priorities was, therefore, to address the issues related to the measurement of youth employment problems and program impacts.

In February 1978, a Conference on Employment Statistics and Youth was held to bring together the Nation's experts to assess these

issues. The conference was organized by the Institute of Industrial Relations of the University of California, Los Angeles, under the joint sponsorship of the Department of Labor's Office of the Assistant Secretary for Policy, Evaluation and Research, and the Office of Youth Programs, with guidance from the National Commission on Employment and Unemployment Statistics. A total of twenty-two papers were commissioned for this conference. Based upon discussions at the conference and reviews by a panel of independent experts, thirteen papers were selected for inclusion in a basic volume on Youth Unemployment: Its Meaning and Measurement. The remaining nine analyses which are included in this set of supplementary papers provide additional insights, although reviewers indicated some difficulties which are noted below along with the important findings of the papers.

The first three papers focus on the meaning of our unemployment counts. The "Measurement and Interpretation of Teenage Unemployment in the United States and Other Countries," by Beatrice Reubens, assesses our statistics from an comparative international perspective, indicating that the high rate of teenage unemployment in the United States is due in part to the inclusion of 16- and 17-year-old student job seekers in the tallies, and in part to the use of household surveys rather than registration with unemployment agencies as the source of data on unemployment. The greater proportion of youth in the U.S. who combine work and schooling is also a source of our Nation's comparatively high rate of teenage unemployment. Further analysis of the school to work transition experience in other

countries--its institutional basis and demographic underpinnings--as well as of employment and unemployment concepts and data collection systems, are required before the international comparisons have meaning. Because other countries do things differently does not make our approach right or wrong. Certainly, however, it suggests the availability and acceptability of options.

Orley Ashenfelter's analysis of the relationship between employment and unemployment over time in "What Do Teenage Unemployment Statistics Measure?" shows that while unemployment and employment move in lockstep for adults--i.e., more jobs mean fewer unemployed--the pattern does not hold for youth, particularly 16- and 17-year-olds and female teenagers. This is another way of stating that there are enormous flows into and out of the labor force for youth, and that labor force participation rates, as well as unemployment rates, must be considered in any analysis of the youth employment situation. While the Ashenfelter approach yields some interesting information--for instance, the finding that black teenage unemployment is more like that of adults than white teenage unemployment and, therefore, presumably more "real"--a more sophisticated approach considering labor force and unemployment exit and entry probabilities is necessary to move beyond the obvious finding that unemployment means something much different for the average youth than the average adult.

"Youth Participation Rates and the Availability of Jobs," by Francine Blau provides a cross-sectional analysis of unemployment and labor force participation rates, considering a number of other variables. The paper finds that where unemployment is high, all else being equal, labor force participation is low. On the other hand, the probabilities

of labor force entry or exit over a one-year period do not vary significantly by rate of unemployment. The author concludes that net effect of the ups and downs of the business cycle on labor force participation of youth will not be very great, but that prolonged periods of high unemployment can produce a stockpile of discouraged workers. The conclusion is consistent with other findings: cross-sectional analyses usually indicate a stronger relationship between unemployment and labor force participation than time-series analysis. There are some problems with the Blau analysis in that base-year area unemployment rather than changes in employment are the variable being tested for impact; the latter would be more appropriate. Also, given the weak correlation between overall and youth unemployment rates, there is not likely to be a strong relationship when ovenall rates are used as a proxie. Nevertheless, the analysis correctly suggests the complexity of the relationship between job-seeking and opportunity, and reiterates the underlying uncertainies about what is being measured by youth unemployment rates.

The next four papers assess important factors which underlie the employment and unemployment statistics. The sixteen to twenty-four school to work transition period is also the time when most people move from dependency to marriage or self-support. "Family Status and Labor Force Patterns," by Martha Hill, suggests that there is a substantial interrelationship between family and household structure and labor supply. Youth who are heads of households tend to work much more frequently than those who are dependents or wives. For males, marriage is related to very substantial increased in labor force participation rates and hours worked. For females, if there are

children there will be a substantial decline in work with marriage; for childless wives, this is not true. There appears to be a weak relationship between the composition or change in the parents' household and the labor force participation rate for youth, although nonwhite males from split families have a lower labor force participation rate than those from two-parent families. The analysis provides some important longitudinal data on changes on family status and work. However, it is impossible to determine the direction of causality. It is uncertain whether increased work opportunities contribute to the rise in independent living or whether the trend toward living alone leads to increased job seeking. It is clear, however, that both living arrangements and family status, as well as changes, must be considered in determining the meaning of employment and unemployment numbers, particularly the prevalence of breadwinning responsibilities.

The question of how to count students has been raised in other papers. "Education, Occupation and Work," by David O'Shea looks at the indirect rather than direct impacts of education. According to the analysis, education is more critical in determining occupational and social status than income. The relationship between earnings and education is apparent mostly in high skill, high prestige occupational categories which account for about one-third of the work force. The payoff of education apparently increases with age in all occupations. Over time, there has been a convergence of education levels among workers in all occupations. The findings certainly raise questions whether longer schooling pays off for the average youth who will not go on to professional and managerial ranks. This is important relative to programs tying employment and training services to school attendance in order to encourage school completion. If greater education attainment

does not improve earnings, it might be better to focus on dropouts. Certainly, these in-school programs must be subjected to careful scrutiny. While the analysis ignores a large part of the literature on human capital theory and returns to education, and while it suffers the problems of most such studies in handling education quality issues, its fundamental messages are important--that education decisions cannot be considered from the economic perspective alone, that many youth end up over-qualified for the jobs they eventually achieve, that there is much we do not know about the process, and that the indirect, marginal effects of education on measured rates of employment and earnings for young people are probably quite limited.

"Alienation and Adjustment to Limited Prospects," by David Gottlieb, suggests that data on employment or unemployment provide little useful information about the real issues facing youth and, in particular, the factors at the key decision points such as entrance into the military or training programs, departure from school, or assumption of family responsibilities. The paper speculates that youth may not understand survey questions or many respond based on their perceptions of what is or is not wanted rather than reality, but that the attitudes of disadvantaged youth probably do not differ much from those of more advantaged. The analysis suffers from a lack of clear definition of the term alienation or precise information about how this might affect specific responses, but it does suggest the need for in-depth personal interviews to supplement employment and unemployment survey data.

"Do Youth Really Want to Work," by Patricia Miller and William Simon, compares the work attitudes of youth and adults from a variety of perspectives. Substantial and persistent continuity is found between the work values of younger and older men. Youth emphasize

security somewhat less, give a marginally higher priority to immediate payoffs, and give more consideration to the time away from the job, but the differences are less significant than the similarities. The unemployed have much the same values as the employed. Blacks who suffer from greater job insecurity, lower wages, and lower status employment, not surprisingly give more emphasis to security, wages, and time away from the job. Most critically, youth are much less likely to rate their current jobs highly by any criterion than are adults. Given the parallel in attitudes and expectations, this would suggest that youth leave jobs more frequently simply because these are not rewarding on the average and they can do better with age and mobility. The analysis is flawed somewhat by the exclusion of adults earning more than $15,000 annually, but the fundamental message is that for the vast majority of youth, there is no "alienation" apparent in work values.

The last two papers examine the long-term consequences of the employment experiences of youth. Wayne Stevenson in "The Relationship Between Youth Employment and Future Employability and Earnings," concludes that after controlling for related variables, early labor force status has a significant impact on future employment and earnings. Those who work during the transition years tend to do better than those who do not. The worst off are teenagers who are out of school and out of the labor force. Skill training during the transition period is also correlated with higher earnings. These results were obtained though the analysis or measured labor force status in a single week in the base period; if a full year's employment history or even a multi-year history had been considered, there would probably have been even greater evidence of impact.

"Employment and Earnings Patterns: The Dynamics of Change," by David Farber takes this longer-term view. The analysis of the earnings patterns of employment and training program participants as well as a random sample of all wage earners indicates a consistency in the earnings trends of individuals. Those young persons who experience rising annual earnings in the early years are likely to continue upward. Those with mixed earnings patterns are not likely to do as well. Because of the high correlations between early patterns and future earnings, regression analyses should probably include pattern variables. What is left unclear is the extent that policy intervention can alter patterns, or whether the patterns reflect sorting or success building on success. The latter view would support the funding that work builds useful experience and that the labor market is a ladder which must be climbed; the former explanation would essentially mean that winners and losers are predetermined by personal characteristics.

In summary, these nine papers, despite technical questions in some cases, raise significant issues concerning the meaning and application of employment and unemployment statistics:

1. The inclusion of in-school youth, particularly 16- and 17-year-olds, among the unemployed is inconsistent with the approach of some other countries.

2. The notion that the measured labor force represents the pool of available workers clearly does not apply for youth.

3. There is an undeniable relationship between youth unemployment and labor force participation rates, but it is not clearcut either from either a cross-sectional or time-series perspective.

4. Changes in living arrangements and family status are intimately related to labor market status changes for youth, although the direction of causality is uncertain.

5. Education has limited indirect impacts on the increased employment and earnings of youth.

6. There is surprisingly consistency between the work values of youth and adults, and between disadvantaged and advantaged youth. The alienation and other perceived attitudinal manifestations are more the result of unrequited than unrealistic work values.

7. There is evidence that, on the average, work and training lead to future employment success, although it is difficult to determine whether employment and training interventions pay off at the margin.

THE MEASUREMENT AND INTERPRETATION OF TEENAGE UNEMPLOYMENT IN THE UNITED STATES AND OTHER COUNTRIES

By: Beatrice G. Reubens

ABSTRACT

In comparison with the United States, other advanced countries are less concerned about all-inclusive measurement of unemployment and more concerned about providing programs that aid the vast majority of unemployed teenagers. Because of their recent experience with full employment, these countries are more resistant than we to accepting high rates of unemployment as normal and less inclined to focus heavily on disadvantaged groups, although the latter are not neglected. The age of leaving compulsory school in other countries usually coincides with finishing a recognized and credentialled stage of education, avoiding our ambiguous labor market position of school dropouts who have completed compulsory education. European countries also tend to ignore most unemployment among in-school teenagers during the school year.

It is desirable to separate all statistics for American teenagers into sixteen to seventeen and eighteen to nineteen to list in-school and out-of-school separately within the age groups. Perhaps we should reconsider the labor force activities of sixteen to seventeen in-school youth. In any case, unemployed in-school youth and other part-time workers should be translated into full-time equivalents. The sixteen to seventeen out-of-school population is in need of a variety of services, whether or not they are unemployed. Teenagers who are neither in the labor force nor in school, especially the males and nonwhites, require more investigation and attention.

Although the labor force survey is a preferred method of collecting unemployment statistics, countries with fairly complete registration of unemployment and active local employment service organizations may be in as good or better position to keep track of monthly changes in local unemployment and to recommend and administer youth programs. Whether such registration statistics could be similarly used in the U.S. is questionable, since the facilitating circumstances are lacking.

INTRODUCTION

This paper considers how the United States measures and reports on teenage unemployment in relation to the need of policymakers. Policymakers have to decide what amount, types and location of youth unemployment warrant public policy action. The question is whether sufficient information on youth unemployment is easily available so that policymakers can devise appropriate programs and establish the criteria for admission to those programs, given the prevailing social values and

goals. In order to broaden the perspective, the paper will discuss the American situation in comparison with the concepts, methods, data and policies of other countries.

It is beyond the scope of this paper to consider the other, related data about youth and their families that policymakers may desire or their need for explanations and theories of youth unemployment, although these are clearly relevant.

An unemployment rate for the whole labor force serves several functions in national and international life and is an emotionally charged statistic. The overall unemployment rate is used as a measure of the economic and social hardship of individuals. It also provides a gauge of the underutilization of human resources, of foregone output, and of the full employment gap. It offers a guide to cyclical and secular trends in the economy. It is regarded as an indicator of a society's stability and an economy's soundness. It is cited in comparative assessments of different social systems. It is used as a guide to the establishment of programs and the allocation of public funds amoung communities.

In the United States doubts have arisen that the overall unemployment rate or any single measure, such as unemployment, can serve all of these diverse purposes at once. There is even doubt that the unemployment rate adequately measures the extent of hardship or the job needs of individuals.[1] Moreover, widespread agreement prevails that a measure reporting the incidence, frequency, and duration of spells of unemployment would be superior to the cross-sectional unemployment rate, but it has not yet become an official U.S. statistic. Canadian studies

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1. Julius Shishkin, "Employment and Unemployment: the Doughnut or the Hole?" Monthly Labor Review, vol. 99, (February 1976), pp. 3-10; Willard Wirtz and Harold Goldstein, A Critical Look at the Measuring of Work (Washington: National Manpower Institute, 1975); Henry Wallich, "What is to be Done?" Challenge, (November/December 1977), p. 36; Carolyn Shaw Bell, "Basic Data and Economic Policy," Challenge, (November/December 1977), pp. 46-47; Curtis Gilroy, "Supplemental Measures of Labor Force Utilization," Monthly Labor Review, vol. 98 (May 1975), pp. 13-23; Julius Shishkin and Robert L. Stein, "Problems in Measuring Unemployment," Monthly Labor Review (August 1975), 3-10; Julius Shishkin, "A New Role for Economic Indicators," Monthly Labor Review, vol. 100 (November 1977), pp. 3-5.

studies have computed these components of unemployment by age groups. One of the tasks of the U.S. Commission on Employment and Unemployment will be to review measurement methods and to consider whether the concept of unemployment should be enriched by additional information about the employment/population ratio, gross and net flows into and out of unemployment, type of employment, earnings, hours of work (including involuntary and voluntary part-time), and family status.[2] Some of these issues have also been discussed in other countries and in the international organizations.[3]

Teenage unemployment rates serve more restricted purposes. They are used chiefly to indicate individual hardship, but the emphasis is somewhat different in the United States than it is in European countries. American analysts tend to accept a large part of teenage unemployment as a transitory experience and part of the maturation and adjustment process, offering varied explanations of the fact that American teenage

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2. John E. Bregger, "Establishment of a New Employment Statistics Review Commission," Monthly Labor Review, vol.100 (March 1977), pp. 14-20; "Jobless Rate: Elusive Statistic," New York Times, January 13, 1978; M. McIlveen and H. Sims, The Flow Components of Unemployment in Canada, paper presented at Regional Science Association meeting, May 30, 1977; F.T. Denton, C.H. Feaver and A.L. Robb, "The Short Run Dynamics of the Canadian Labor Market" (Ottawa: Economic Council of Canada, 1975).

3. Adrian Sinfield, "Improved Statistics on Unemployment: a First Step in Preventing Prolonged Joblessness and Poverty," OECD Observer, (December 1968), pp. 8-10; Maurice Peston, "Unemployment: Why We Need a New Measurement," Lloyds Bank Review, (April 1972), pp. 1-7; James J. Hughes, "How Should We Measure Unemployment?" British Journal of Industrial Relations, vol. 13 (July 1975), pp. 317-33; John B. Wood, How Much Unemployment? (London: The Institute of Economic Affairs, Research Monograph 28, April 1972); Jim Bourlet and Adrian Bell, Unemployment and Inflation: The Need For A Trustworthy Unemployment Indicator (London: Economic Research Council, October 1973); OECD, Entry of Young People into Working Life, General Report (Paris: OECD, 1977), pp. 59-69; International Labor Office, Measurement of Underemployment: Concepts and Methods (Geneva: I.L.O., 1966).

unemployment rates have greatly exceeded those of most European countries in most years of the postwar period.[4] The possibility should be faced that prolonged exposure to a difficult situation breeds tolerance and fosters attempts to establish it as normal. It also seems to lead to selective concern. Thus, at a conference on teenage unemployment conducted by the Congressional Budget Office at the end of 1976, several participants were said to believe "that the unemployment problem among white teenagers is relatively limited, but that there is a very serious problem with regard to the inner city, particularly minority teenagers."[5]

This view is fairly prevalent today among high policymakers in the executive branch and occasionally results in declarations that many teenage blacks do not find jobs until they reach their twenties. There is no hard evidence for this belief. But there are data suggesting frequent turnover in low-level jobs and intervening periods of unemployment for black youth. Youth unemployment data which record the incidence, duration and number of spells of unemployment in a year or over a longer time period are available and should be given equal attention with unemployment rates. It makes a major difference to policy planning whether a substantial group of minority or other youth remain unemployed for years at a time or whether the prevailing pattern is one of short-lived jobs with considerable turnover in the ranks of the unemployed.

Most European countries have enjoyed long periods when new entrants had a choice of many jobs and few young people experienced unemployment on changing jobs, even in the years when the baby-boom generation entered work in large numbers. Therefore, interruptions of that pattern are regarded as abnormal and unacceptable. Several Scandinavian countries have announced a public goal to provide each teenager with a job,

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4. Beatrice G. Reubens, "Foreign and American Experience with the Youth Transition" in National Commission for Manpower Policy, From School to Work: Improving the Transition (Washington: Government Printing Office, 1976), pp. 274-79; U.S. Bureau of Labor Statistics, International Comparisons of Unemployment (Washington: Government Printing Office, 1978).

5. Congressional Budget Office, The Teenage Unemployment Problem: What are the Options? (Washington: Government Printing Office, 1977), p. 69.

training, or education, leaving none to be unemployed. When attention is given to disadvantaged groups among unemployed youth in European countries, it is almost always within a framework of policies that cater to the entire group. In contrast to our racial-ethnic divisions in the statistics, other countries tend to stress socio-economic status as the primary differentiator, considering ethnic variations as an additional dimension. It can be argued that we have lost something by our emphasis. In Europe unemployment is viewed primarily as affecting individuals, not, as in the United States, as a group phenomenon where a high proportion of black unemployed is more significant than a larger absolute number of whites, when identical criteria of hardship or need are used.

European countries believe that special efforts should be made to minimize the unemployment of all new entrants to the labor market and that young people should have unemployment rates close to the national average. There are three strands in the European attitude toward youth unemployment. First, a period of unemployment at the outset of one's working career is viewed as damaging to long-run attitudes, ambitions and behavior. Stronger positions are taken in Europe on the evils of entrance unemployment than in the U.S.[6] Secondly, in some countries the theme of individual hardship and alienation is strongly overlaid with political fears about the reactions of the radical segment of students who graduate from universities into unemployment.

There is relatively little talk in Europe about youth as secondary workers who live with their families and do not need the income. There is not much excuse-making for youth unemployment in Europe on the grounds that job-search time is valuable or that high rates of job-changing by youth inevitably produce periods of unemployment. However, as in the U.S., private and public employment policies tend to favor established workers, especially male heads of households.

Thirdly, the adverse reaction to youth unemployment in European countries also springs from a general belief that it weakens the economy. Viewing the new entrants as the source of renewal and advance for the economy and the labor force, European youth unemployment programs

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6. E.g., British Youth Council, Youth Unemployment: Causes and Cures, Report of a Working Party, London, March 1977, p.1.

have attempted to compensate for the recession deficits in private sector training of young people. It is of more than passing interest, although beyond the scope of this paper, that the United States is virtually the only advanced industrial nation without an organized national approach toward skill training of new entrants, apart from remedial programs. Our remedial training programs for unemployed young people are concerned with helping the unemployed to improve their own position and livelihood. Because there is relatively little pressure for training due to existing or anticipated skill shortages, American youth unemployment programs can cater heavily to the disadvantaged and attempt to instill skills that suit the capacities of the trainees. European programs assume that there will be a skill shortage and they try to match the trainees to those requirements.

With these differences in attitudes and policy initiatives as an introduction, the discussion can turn to the chief differences in the way countries measure teenage unemployment.

AGE LIMITS AND AGE GROUPS

The most common arrangement is to count young people as unemployed from the age when compulsory education ends and the law permits full-time work to begin. In most countries these are simultaneous dates, usually fifteen or sixteen, but in Italy the school-leaving age has been fourteen and the legal age to start work has been fifteen, leaving a difficult gap. Most American states provide that compulsory education ends and the legal working age begins at sixteen. A cut-off date at the lowest legal age both for leaving school and beginning work means that those under the legal age who are in the labor market are omitted from unemployment statistics. This causes a problem only in countries where observance of the law is lax, as in Italy, or where the laws vary in the subdivisions of a federal country, as in the U.S. or West Germany.

Unlike the United States, almost all countries coordinate the end of compulsory education with the completion of a recognized phase of the educational sequence. When they raise the age of compulsory education, they reorganize the educational sequences so that credentials can be given to those who leave school at the compulsory age. The American arrangements make dropouts of those who leave school at the legal age of

sixteen, since no recognition is given by society to the completion of junior high school. Other countries award socially acceptable credentials to those who complete a similar sequence. An ambiguous and unfavorable labor market situation confronts American out-of-school youth who are not high school graduates.

A related issue arises having to do with the difference between the legal school-leaving age and the actual age at which the majority of young people move from school to the full-time labor market. Countries divide into those like Great Britain, Austria, Switzerland, Australia, and Germany where most young people leave education at the earliest legal moment or soon thereafter, and others like Japan, France, the Scandinavian countries, Canada and the United States where a small minority of the age group leaves education at the legal age. Countries should present data on the youth labor force and on employment and unemployment using the appropriate divisions to suit their individual educational circumstances. Many countries do this but, because of the desire to standardize unemployment data, the international agencies have urged countries to produce two main youth unemployment rates--for teenagers and young adults. However, these rates can conceal important differences within the age group.

American analysis would benefit by making sharp distinctions in all youth labor market data between sixteen to seventeen and eighteen to nineteen among the teenagers, and between twenty to twenty-two and twenty-three to twenty-four among the young adults. Data grouping sixteen to nineteen year-olds should be avoided. Distinctions would reflect the fact that the sixteen to seventeen year-olds usually are not high school graduates and that the age group is overwhelmingly in school, in sharp contrast to the eighteen to nineteen-year group. (Tables 1 and 2). In the same way, a two-fold division among the young adults would capture most of those still in college.

In addition to using age breaks that relate to the actual situation of various teenage subdivisions, other countries pay much more attention than we do to studying separately the annual cohort of new entrants to the full-time labor market, dividing them according to the accepted national educational levels. Using the entire cohort as the universe, the

TABLE 2

PERSONS 18 AND 19 YEARS OF AGE: CIVILIAN NONINSTITUTIONAL POPULATION, PERCENT ENROLLED IN SCHOOL, LABOR FORCE PARTICIPATION, AND UNEMPLOYMENT, UNITED STATES, OCTOBER OF 1955-1975.

Year	Persons 18 and 19 Years of Age							
	Civilian Noninstitutional Population		Civilian Labor Force		Labor Force Participation Rate		Unemployed	
	Total Number (000)	Percent Enrolled in School	Total Number (000)	Percent Enrolled in School	Enrolled in School	Not Enrolled in School	Total Number (000)	Percent Enrolled in School
1955	3005	31.5	2455	18.9	37.7	74.4	175	25.1
1956	3978	35.4	2332	20.6	34.2	72.0	137	17.5
1957	4041	34.9	2406	19.4	33.1	73.7	193	15.5
1958	4158	37.6	2393	21.7	33.2	72.2	298	13.8
1959	4353	36.8	2496	21.1	32.9	71.6	321	13.1
1960	4733	38.4	2716	21.4	32.0	73.2	367	14.2
1961	4939	38.0	2905	21.2	31.6	71.8	398	14.6
1962	5129	41.8	2821	22.2	29.2	73.5	340	18.5
1963	5043	40.9	2880	23.8	33.3	73.6	396	17.7
1964	5276	41.6	2922	23.5	31.3	72.6	384	16.7
1965	6329	46.3	3500	27.7	33.1	74.4	415	26.3
1966	6724	47.2	3714	30.6	35.8	72.6	374	26.5
1967	6359	47.6	3518	30.6	36.0	72.9	455	27.3
1968	6588	50.3	3633	34.8	38.1	72.4	392	31.4
1969	6679	50.2	3840	35.4	40.5	74.6	402	38.1
1970	6958	47.8	3982	33.0	39.6	73.4	600	32.2
1971	7231	49.2	4111	34.9	40.3	72.9	599	30.2
1972	7462	46.3	4490	32.0	41.5	76.3	595	30.8
1973	7648	42.9	4738	29.2	42.1	76.8	547	27.6
1974	7822	43.1	4919	28.9	42.1	78.7	741	24.0
1975	8024	46.9	4889	32.0	41.5	78.1	857	27.2
1976	8148	46.2	5130	32.6	44.4	78.9	854	27.6

Source: U.S. Dept. of Labor, Employment and Training Report of the President 1977 (Washington, D.C., U.S. Government Printing Office, 1977), Table B-6, pp. 196, 197, 198; Table B-7, p. 200. U.S. Dept. of Labor, Bureau of Labor Statistics, Students, Graduates and Dropouts in the Labor Market, October 1976, Special Labor Force Report 200.

TABLE 1

PERSONS 16 AND 17 YEARS OF AGE: CIVILIAN NONINSTITUTIONAL POPULATION, PERCENT ENROLLED IN SCHOOL, LABOR FORCE PARTICIPATION AND UNEMPLOYMENT, UNITED STATES, OCTOBER OF 1955-1975.

	Persons 16 and 17 Years of Age							
	Civilian Noninstitutional Population		Civilian Labor Force		Labor Force Participation Rate		Unemployed	
Year	Total Number (000)	Percent Enrolled in School	Total Number (000)	Percent Enrolled in School	Enrolled in School	Not Enrolled in School	Total Number (000)	Percent Enrolled in School
1955	4460	77.4	1677	61.2	29.7	64.5	155	38.1
1956	4500	78.4	1751	63.4	31.5	65.9	157	52.2
1957	4647	80.5	1735	68.0	31.5	61.2	164	49.4
1958	5001	88.6	1795	66.5	29.6	61.9	247	40.9
1959	5448	82.9	1859	69.6	28.7	60.6	243	50.2
1960	5573	82.6	1940	67.6	28.5	64.7	254	53.9
1961	5437	83.5	1760	68.0	26.3	63.0	266	55.6
1962	5622	84.3	1814	72.4	27.7	56.9	219	61.6
1963	6549	87.1	2138	77.1	28.9	58.0	329	60.2
1964	7050	87.7	2195	78.2	27.8	55.1	300	68.3
1965	6925	87.4	2451	78.1	31.6	61.5	308	66.9
1966	6922	88.5	2469	81.6	32.9	57.1	286	63.9
1967	7051	88.8	2610	83.0	34.6	56.3	373	74.7
1968	7266	90.2	2609	85.6	34.1	52.7	338	76.6
1969	7481	89.7	2953	84.7	37.3	58.8	435	78.6
1970	7699	90.0	2944	85.2	36.2	56.3	532	76.5
1971	7871	90.2	2983	85.4	35.8	56.8	562	78.8
1972	8065	88.9	3179	83.2	36.9	59.6	551	76.6
1973	8195	88.3	3571	83.4	41.2	61.8	573	79.1
1974	8298	87.9	3670	82.1	41.3	65.1	659	76.8
1975	8313	89.0	3529	84.6	40.3	59.5	744	73.3
1976	8303	89.1	3490	85.0	40.1	58.0	713	77.8

Source: U.S. Dept. of Labor, Employment and Training Report of the President 1977 (Washington, D.C., U.S. Government Printing Office, 1977), Table B-6, pp. 196, 197, 198, Table B-7, p. 200; U.S. Department of Labor, Bureau of Labor Statistics, Students, Graduates and Dropouts in the Labor Market, October 1976, Special Labor Force Report 200.

statistics present information on the length of time it takes each group to find first jobs and identifies the sizable number who experience no entrance unemployment because their jobs have been prearranged. The concept of new entrants is recognized in the statistics of Great Britain, Japan, France, and Italy, among others. This treatment should be distinguished from the U.S. approach to entrance and reentrance unemployment. Our universe is the totality of the unemployed and entry and reentry are of interest as reasons for being unemployed. Moreover, the usual presentation of this information does not separate young people in the labor force who are still at school from others, a difficulty in our overall treatment of teenage unemployment which is discussed below.

It would improve American analysis of the teenage labor market and of unemployment specifically if both our cross-sectional data and longitudinal studies introduced the category of "new out-of-school entrants to the labor market" as a prime object for data collection and interpretation. We would use the following educational divisions: less than high school graduate, high school graduate, junior college graduate, less than four-year college and four-year college. The last category would be very small if the analysis is confined to teenagers. If it extends to all under twenty-five years of age, a further category could be added of "post college." Allowance might also be made for other types of training and education, such as a post-high school secretarial or technical course that precedes entrance to the full-time labor market.

IN SCHOOL AND IN THE LABOR FORCE

Probably the most confusing information about the total amount of teenage unemployment in the United States, compared with other countries, arises from statistics that do not distinguish between teenagers, especially the sixteen to seventeen year-olds, who are still in school and seek part-time jobs during the school year, and those who are out of school. Whatever merit there is in counting students as unemployed if they fail to obtain jobs over the long summer vacation, there is a serious question whether their school-time unemployment should receive the

7. Beatrice G. Reubens, Bridges to Work: International Comparisons of Transition Services (Montclair, N.J.: Allenheld, Osmun & Co., 1977), pp. 163-68.

same weight as is given to young unemployed people in the full-time labor market. Our practice distorts the actual size and nature of our teenage unemployment problem, leading to an overstatement of labor market entrances and exits and often to confused policy initiatives. It also exaggerates our problem in comparison with that of other countries where a lower proportion of the age group is in school in most cases, fewer of those who are in school seek work during the school year or in short vacations, and those who are in school and seek part-time jobs unsuccessfully often do not appear in the unemployment statistics.

A consideration of the U.S. in- and out-of-school teenage labor force, divided into the sixteen to seventeen and eighteen to nineteen year-olds, is in order. As Table 1 indicates for October, a time of full school schedules, as far back as 1955 over three-fourths of the sixteen to seventeen year population was enrolled in school. Over the years, the increased size of the sixteen to seventeen year population was matched by rising proportion enrolled in school, settling in at around 89-90% since 1968. Growing slightly faster than population, the total civilian labor force of sixteen to seventeen-year olds as far back as 1955 consisted largely of those enrolled in school and since 1967 that proportion has risen almost without interruption from around 60% to 83-85%. The labor force participation rates of the enrolled have risen from around 30% to over 40% while the nonenrolled minority has shown a small decline which is particularly conspicuous among the males. Enrolled females have moved up from a 21.4% participation rate in 1955 to 38-39% in recent years, while nonenrolled have shown no distinct trend.

The total number of unemployed sixteen to seventeen year-olds has risen over the years at a more rapid rate than their total labor force or population. The division of the unemployment between the enrolled and nonenrolled has altered in the direction of increasing the share of the enrolled from 38.1% in 1955 to 77,8% in 1976, but the enrolled share of unemployment has been consistently lower than their share of the sixteen to seventeen year-old labor force. The trend for males and females is much the same, but enrolled females have had a point or two larger share of the total unemployment than enrolled males. Viewed in terms

of unemployment rates, both the enrolled and the nonenrolled have had marked increases. Enrolled male unemployment rates have risen from 6.2% in 1955 to a historical high of 19.6% in 1976, while nonenrolled males increased from 18.4% in 1955 to the all-time high of 35.7% in 1976. For enrolled females, the advance from 4.8% in 1955 to 19.2% in 1976 and for nonenrolled females the climb was from 8.5% in 1955 to 37.6% in 1975, again historical high points. These data also show the persistent disadvantage of out-of-school youth.[8]

Turning to the eighteen to nineteen year-olds, one finds, as might be expected, that their total population is much more firmly out of school than the sixteen to seventeen year-olds (Table 2). Although a general trend toward a rising proportion of the age group in school can be observed from 1955 through 1976, the peak of just over 50% was reached in 1968 and 1969, largely due to male enrollments because of Vietnam draft threats. Thereafter the in-school proportion dropped through 1973 and then rose somewhat to around 46-47% in 1975 and 1976. Male school enrollment rates run considerably higher than female in this age group, unlike the younger cohort where they are very nearly the same. Among the eighteen to nineteen year-old males, the 1955 rate was 42.5% while the female rate was 22.5%, but by 1975 the female rate of 44.2% was only 5% behind the male 1975 enrollment rate.

The eighteen to nineteen year-old labor force is a higher proportion of the total age group and more heavily out-of-school than is the sixteen to seventeen year labor force. Although the trend has been for an increasing share of the eighteen to nineteen labor force to be in-school, the highest percentage reached was only 35.4% in 1969 and it was as low as 18.9% in 1955. Labor force participation rates for the eighteen to nineteen age group show that out-of-school youth were almost twice as likely to be in the labor force as those in-school. The upward trend in participation rates for the enrolled was somewhat more marked

8. Employment and Training Report of the President (Washington: Government Printing Office, 1977), Table B-7; U.S. Bureau of Labor Statistics, Students, Graduates and Dropouts in the Labor Market, October 1970, Special Labor Force Report 200, Table A; U.S. Bureau of Labor Statistics, Work Experience of the Population in 1976, Special Labor Force Report 201, Table B13.

than for the nonenrolled, but neither showed the striking rise that the sixteen to seventeen enrolled did. In contrast to the level or declining trends among eighteen to nineteen year-old males, females of the same age, in and out of school, have exhibited the same soaring participation rates as have older age cohorts of women in recent years.

Like the sixteen to seventeen year-olds, the enrolled eighteen year-olds had a smaller share of the unemployment of their age group than of the labor force in almost all years. From one-fourth to 30% of unemployment was accounted for by the enrolled from 1965 on. For enrolled males there were seven years when their share of unemployment exceeded their share of the labor force. The eighteen to nineteen unemployment rates for enrolled and nonenrolled are much closer to one another than are the rates for the sixteen to seventeen year-olds.

It is clear that the eighteen to nineteen year-old group differs substantially from the sixteen to seventeen in the importance of school as the major activity. To treat the age groups together or to ignore enrollment status, especially in computing employment/population ratios and similar indicators, is to miss important variations which are as marked for black as for white youth. All of the foregoing calculations are based on the Current Population Survey and its special questions in the October interview which, according to BLS officials, provide a more reliable guide to enrollment status than data for other months. The paper at this conference by Borus, Mott and Nestel compares NLS data with CPS data for other months than October and uses different breakdowns of the data. Their conclusions therefore may not be fully applicable to the data presented here. It would be useful if NLS data could be compared with CPS October data along the age and enrollment breaks used in this paper.

There are relatively few studies in other countries of students in the labor force during the school years and even less on their unemployment as distinguished from that of other young people. Most information does not separate teenagers from young adults. An OECD study of part-time employment noted that in European countries students seeking part-time jobs during the school year were the exception rather than the rule. Noting the prevalence of this kind of work among American stu-

dents, the study observed that students elsewhere took up casual jobs since part-time work was generally not adapted to their requirements.[9] Canada probably comes closest to the United States in the proportion of students who seek jobs during the school year. In its revised labor force survey which has produced monthly data for 1975 onward, Canada now has a more accurate and comparable record of the labor force and unemployment rates of students. However, Canadian teenagers cannot be separated out from the age group fifteen years and over. As Table 3 shows for October 1976 when schools were in session, American students are more prone to be in the labor force than Canadian and also have a higher unemployment rate. Information also is available from the same sources as Table 3 on the proportions of students who were employed full-time and part-time in October 1976:

Employed Students

	Males		Females	
	Full-time	Part-time	Full-time	Part-time
	Percent			
Canada	49.0	51.0	38.0	62.0
U.S.	41.0	59.0	29.2	70.8

Canadian students seem slightly more likely to work full-time than American, but differences in the age and educational composition of the groups in the two countries may be chiefly responsible. Canadian analysts of the flow components of unemployment found that out-of-school teenagers on average became unemployed more frequently and had a longer duration of unemployment, but had about the same number of spells of idleness as the total teenage labor force. For the twenty to twenty-four year group, enrollment status had little effect on the components of unemployment.[10]

Some information is available for Japan from the triennial Employment Status Survey which regularly presents information on those who are at work but whose main activity is school. Only about 50,000 to 60,000

9. Jean Hallaire, Part-time Employment: Its Extent and Its Problems (Paris: OECD, 1968), p. 34.

10. McIlveen and Sims, op. cit.

TABLE 3

STUDENTS IN THE LABOR FORCE, CANADA AND THE UNITED STATES
OCTOBER, 1976

	Total Student Population	Students In Labor Force	Labor Force Participation Rate of Students	Unemployment Rate of Students
	(000)		Percent	
Canada (15 years & over)	2,335	892	38.2	6.5
United States (16-34)	18,130	9,038	49.8	12.2

Source: Statistics Canada, Labour Force Survey Division, Labour Force Activities and Characteristics of Students, Research Paper no. 14, Ottawa, July 1977, Table 1; U.S. Bureau of Labor statistics, Students, Graduates and Dropouts in the Labor Market, October 1976, Special Labor Force Report 200, Washington, 1977, Table A.

are in this category, constituting less than 1% of employed persons aged fifteen to twenty-four.[11] Some of the reasons why few students in other countries seek jobs when classes are in session are suggestive for American education and employment policy. The burden of studies is so heavy, even in upper secondary school, that relatively few young people have much time for paid employment. In countries where government grants or loans are paid to students, with or without a family income, means test, paid work may be forbidden during the school period. With rising costs of living due to inflation and the failure of grants and loans to keep pace, more students are finding it necessary to supplement their other sources of income. But the pressure to work is reduced by the government study allowances as well as the policy of continuing childrens' allowances and offering tax deductions to families in which young people remain in school beyond the compulsory stage. Work is more common during the summers and over long vacations and some countries capture this unemployment.

Some countries say that they monitor student unemployment during the school year in their labor force surveys, but they publish no separate information on the category and it is likely that many students are not counted.[12] Survey questions must be worded very carefully in order to capture the full school component. Until Canada introduced its new survey questions, it had been undercounting students in the labor force. A different situation obtains in countries that rely entirely or largely on registrations at the employment service offices for their unemployment statistics. Students are not accepted as registrants because they are not available for full-time work; in many cases the offices do not register those wishing only part-time work. However, a number of students may get into the unemployment count if they are required to register in order to qualify for benefits other than unemploy-

11. Japan, Office of the Prime Minister, Bureau of Statistics, Employment Status Survey, Tokyo, triennial; U.S. Bureau of Labor Statistics, Students in the Labor Force: An International Comparison for Major Countries, unpublished, p. 3.

12. U.S. Bureau of Labor Statistics, International Comparisons of Unemployment, loc. cit., pp. 13-17, 21-22; U.S. Bureau of Labor Statistics, Students in the Labor Force: An International Comparison for Major Countries; Reubens, "Foreign and American Experience with the Youth Transition," loc. cit., pp. 277-80.

ment insurance. In Great Britain this situation developed in relation to claims for supplementary benefit, a kind of welfare payment, which students applied for over short vacation periods when they did not find jobs. At the beginning of 1976 over 120,000 students above the age of eighteen were registered as unemployed and the authorities decided that they confused and distorted the statistics and would henceforth be excluded from the unemployment count because they were not available for permanent jobs. The regulations in regard to study grants also were changed, covering vacation periods so that applications for supplementary benefit during the school year would not be made, although those unemployed during the summers could apply.[13]

Some countries have auxiliary categories of unemployed which can include those who would like to work but whose requirements as to hours, place and type of work may not be consonant with existing job vacancies. This is not quite the same as our "discouraged unemployed." The Swedish concept of "latent unemployment" can include students who say they would work while studying, if all conditions met their requirements. But they have not necessarily been searching for work and are not discouraged unemployed. In French labor force surveys there is a marginal category of jobseekers which can include students during the school year.

Our knowledge about the interrelationships between attending school and working at the same time is quite incomplete and requires further study among American teenagers.[14] Two surveys conducted by educational researchers have somewhat different findings than those of labor market researchers, including papers presented at this conference. The educational researchers find lower proportions at work than do the CPS or NLS surveys and those with jobs seem to work fewer hours, according to the educational surveys. The latter also indicate that work is undertaken for the earnings and with little thought to the type of job or its relation to future careers. Some studies find little benefit from working during the school years, either in regard to work attitudes and knowlege or the jobs later obtained. Analysis of attrition from college

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13. House of Commons, Hansard, February 23, 1976.

14. Beatrice G. Reubens, Preparation for Work: A Cross-Country Analysis (Montclair, N.J.: Allenheld & Osmun, forthcoming).

after the first year shows that those in full-time employment were twice as prone to withdraw from education as those working part-time or not at all. The effect on college grades of working more than fifteen hours a week has been found to be adverse. In a survey of high school students, those working over fifteen hours a week had below average grades and doubts about finishing high school. The most common positive finding has been that those who have worked while at school find their first out-of-school job more quickly than others.

The following conclusions may be drawn from a consideration of the American teenage unemployed who are enrolled in school and seek jobs during the school year:[15]

(1) All unemployment data should clearly separate in-school from out-of-school unemployed, preferably by narrower age bands than are now commonly used.

(2) If the in-school unemployed are to be included in an overall

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15. Anita M. Mitchell, Career Development Needs of Seventeen Year Olds; How to Improve Career Development Programs (Washington: National Advisory Council for Career Education, September 1977), Table 9; Measurement and Research Center, Purdue University, Vocational Plans and Preferences of Adolescents, Report of Poll No. 94 of the Purdue Opinion Panel (Lafayette, Ind., May 1972), p. 3a; Measurement and Research Center, Purdue University, Sources of Information for Career Decisions, Report of Poll No. 98 of the Purdue Opinion Panel (Lafayette, Ind. June 1973), pp. 11a, 15a; National Center for Education Statistics; National Longitudinal Study of the High School Class of 1972, Attrition from College: The Class of 1972 Two and One-Half Years After High School Graduation (Washington: U.S. Department of Health, Education and Welfare, 1977), p. 6; Stephen J. Carroll, Part-time Experience and the Transition from School to Work (Santa Monica: Rand Corporation, 1970); J.E. Hay, Keith Evans, and C.A. Lindsay, "Student Part-Time Jobs: Relevant or Non-relevant," Vocational Guidance Quarterly, (December 1973); Jerome Johnston and Jerald Bachman, The Transition from High School to Work: The Work Attitudes and Early Occupational Experiences of Young Men (Ann Arbor, University of Michigan Institute for Social Research, 1973), pp. 81-85; U.S. Bureau of Labor Statistics, Out of School Youth, February 1963, Part II, Special Labor Force Report No. 47 (Washington, 1965), pp. 1418-19; A.P. Garbin, J.J. Salomone, D.P. Jackson, J.A. Ballweg, Worker Adjustment: Problems of Youth in Transition from High School to Work (Columbus: Ohio State University, Center for Vocational and Technical Education, 1970), pp. 47-50; F.A. Zeller, J.R. Shea, A.I. Kohen, J.A. Meyer, Career Thresholds (Columbus: Ohio State University Center for Human Resource Research, Oct. 1970), vol. 2, p. 79.

unemployment rate, the total numbers should be reduced to full-time equivalents.

(3) A special survey should be undertaken through an October CPS which asks detailed questions about the number of hours worked in the reference week, the precise type of job held, the actual earnings, the family income, the amount and methods of job search, the uses of earnings, and the relation between working and academic performance and ambitions. The scattered information available on these subjects suggests that this group might be better served by related education, training and income programs, freeing them from the need to work and transferring some of their jobs to older teenagers.

(4) Because of deficiencies in basic and occupational skills and low educational attainment, almost all of the sixteen to seventeen year-old, out-of-school population presents a series of labor market, social, educational and personal problems, not just an unemployment problem. Numbering over 800,000 and with more than half a million in the labor force, disproportionately black but mostly white, they require a total approach, just as older members of the labor force who entered at sixteen to seventeen or younger are the most likely candidates for remedial programs.

NOT IN SCHOOL AND NOT IN THE LABOR FORCE

Teenagers who are not enrolled in full-time school and are not employed or unemployed have long been a concern in the United States. Data on this group, presented in Table 4, must be treated carefully. On the one hand, there is no allowance for young people whose legitimate activities, such as keeping house, illness, or attendance at various kinds of training courses, account for their failure to appear in one of the two major categories. Moreover, some overstatement of the total results from inclusion of the summer months during which those on vacation from school and not working are recorded as neither in school nor in the labor force. On the other hand, surveys such as the Current Population Survey may undercount the young people who are neither in school nor in the labor force. Low income youth, especially minority youth in central cities, are particularly likely to be missed. Among them are some who

TABLE 4

TEENAGERS NOT IN SCHOOL AND NOT IN THE LABOR FORCE AS A PERCENTAGE OF THEIR CIVILIAN NONINSTUTIONAL POPULATION, UNITED STATES, 1962-1976.

Sex	Males				Females			
Age	16-17		18-19		16-17		18-19	
Race	White	Nonwhite	White	Nonwhite	White	Nonwhite	White	Nonwhite
Year	Percent							
1962	10.0	12.1	5.8	6.5	20.4	26.8	25.0	35.2
1963	10.1	11.6	5.4	7.0	19.2	25.4	25.8	34.0
1964	10.1	12.1	5.8	7.9	18.8	23.5	25.7	33.7
1965	9.0	10.7	5.2	7.1	18.1	21.4	23.8	33.5
1966	9.0	9.9	5.3	7.3	17.3	21.2	22.3	29.7
1967	8.1	8.9	5.3	7.6	16.9	22.0	21.0	26.8
1968	8.3	11.0	6.0	8.9	16.4	20.2	20.7	29.1
1969	8.5	9.7	5.7	9.6	16.6	19.2	19.8	29.6
1970	8.7	12.4	6.5	11.2	16.1	18.6	21.1	28.8
1971	7.9	12.3	6.5	10.4	15.7	19.1	20.2	28.3
1972	9.1	9.8	6.0	9.8	15.4	18.6	19.9	27.9
1973	8.2	12.3	5.8	10.3	15.8	19.3	19.9	28.2
1974	8.8	12.2	6.0	10.2	15.0	18.8	19.5	29.6
1975	8.6	13.4	5.7	11.1	14.9	19.9	18.7	26.9
1976	8.8	12.8	6.0	13.0	14.5	18.0	17.6	26.1

Source: Annual averages, tabulated from Current Population Survey data by the U.S. Bureau of Labor Statistics.

participate in the "subterranean" economy or engage in illicit activities. If they are counted as unemployed, that figure may be inflated. Yet it is equally misleading to view them as having no occupation or income.

Table 4 shows that females in both age groups and of all races have had a marked decline in the proportion of the age group that is recorded as not in school or in the labor force. Furthermore, the spread between the age groups and races has narrowed over time. These trends are part of the phenomenal rise in female labor force participation rates. Males reveal little trend, except that eighteen to nineteen year-old nonwhites have had a distinct rise over the period 1962-1976. Certain stabilities are apparent. Nonwhites show higher percentages than whites and female proportions exceed male, as might be expected because of the sex division of housekeeping and childrearing functions. Among males the older age group has generally had the lower percentages, but for females it has been the reverse.

In other countries this category of teenagers has aroused less attention, although France and Italy have referred to such young people as problem groups. Census data in most countries produces a statistical category that appears to be neither in the labor force nor in school, but it seems a smaller proportion in most countries than the American percentage. An experimental program in Sweden to contact all such teenagers through joint operations by the employment service, schools, and social agencies revealed that the numbers were not as large as had been feared and that most young people were responsive to the outreach efforts.[16] The issue may be not so much to count this category as to decide what can be done for them and who should do it.

SOURCES OF INFORMATION ON TEENAGE UNEMPLOYMENT

Countries obtain their basic unemployment statistics either from a labor force survey at intervals, ranging from monthly to annually, or from the monthly registration of the unemployed in connection with fil-

16. Sweden, National Labour Market Board, Vocational Guidance Division, Unemployment among Young People in Sweden--Measures and Experience (Stockholm, 1977), App. 5.

ing for financial benefits, establishing eligibility for programs, or seeking assistance in finding jobs. However good the cross-sectional unemployment data of a country are from a labor force survey or registration statistics, it is desirable to supplement these with longitudinal studies and analyses of flows into and out of unemployment. The labor force survey generally is considered superior to registration data in generating comprehensive unemployment data for the whole labor force. Seeking greater uniformity in the methods of individual countries, the international agencies have sponsored the labor force survey as a supplement to or replacement for registration statistics. But at present only a few countries conduct a monthly labor force survey and use it exclusively to obtain official unemployment data. Sweden has the best of both worlds, having a monthly labor force survey and monthly registration statistics of good quality and wide coverage.

Whatever merit the labor force survey may have for overall unemployment data and international comparisons, a persuasive case can be made that, under favorable circumstances, countries using registration statistics can gain a good understanding of month to month changes in teenage unemployment and can recommend and carry out programs at the local level. They often can do this better than countries that rely on frequent, comprehensive labor force surveys. The United States, however, is not in this position, nor is it likely to be in the near future.

To give satisfactory service, registration statistics must contain a reasonable proportion of the teenage unemployed, especially of the new entrants who have never worked before.[17] Financial incentives make this group register in a number of countries. In northern European countries where the employment service is strong and there is a separate youth division or special officers, or, as in Great Britain, which has a specialized Careers Service for young people below the university level,

17. "The Unregistered Unemployed in Great Britain," Department of Employment Gazette, December 1976, pp. 1331-36; Guy Standing, "The Distribution of Concealed Unemployment in Great Britain," British Journal of Industrial Relations, vol. 10 (July 1972), pp. 291-99; Christian Brinkmann and Karen Schober Gottwald, "On the Occupational Reintegration of the Unemployed during the 1974/75 Recession," Mitteilungen aud der Arbeitsmarkt--und Berufsforschung, no. 2, 1976, pp. 95-97.

there is an intimate, grass roots acquaintance with the local dimensions of youth unemployment and employment that compensates for some underregistration.

These local offices also have a good notion about the young people who are registered as unemployed for various reasons but are not sincerely seeking work. They are able to mount special outreach programs or concentrate activities on particular groups, based on the close observation of the flow through their offices. Close contact even emboldens some of them to declare, as a Swedish report does, that substantial proportions of unemployed young people suffer from such work disabilities as alcohol or drug addiction, criminal records or detention histories, and other social problems which are particularly prominent in metropolitan areas. Facing the actual circumstances of the registrants, the agencies place as much emphasis on changing the characteristics of these young people as on finding jobs for them.[18] The society is not held entirely to blame, as tends to be the case when American national data are interpreted and programs are established for youth. Sympathy for unwilling employers and an expectation that the young people will be rehabilitated or reformed is far more common when programs arise from the direct experience of employment service personnel with youth.

Registration statistics seem to serve some countries quite well as a barometer of changes in unemployment to which policymakers should pay attention. Changes in the numbers of registrants, the duration of their unemployment and the composition of the registrants are observed by local officials. If the employment service is so organized that it has the chief responsibility for youth unemployment programs, its proximity to the data collection is an advantage. As a result, Britain has decided not to conduct a frequent household survey.

In contrast to other countries, the United States has lacked adequate geographic unemployment data. These are now urgently needed be-

18. Sweden, National Labour Market Board, op. cit.

cause program allocations hinge on local unemployment rates.[19] We do not produce the equivalent of the cumulation of local office youth unemployment statistics into district and regional totals that is achieved by the Careers Service in each British Local Education Authority, the Swedish County Labor Boards, the German Arbeitsamt or the Japanese PESO.

But more important than the collection of statistics from the ground up is the ability of the same agencies to participate in the construction of programs and their execution. Even with the best will in the world and adequate resources, policymakers will face difficult decisions about the time perspective of their policies, the division of programs and funds between general unemployment programs and special programs for teenagers, the amount of attention and program dollars to concentrate on disadvantaged teenagers out of the total allocated to teenagers, and the part of teenage unemployment that should be left untouched by public policy. The answers must come out of the experience and values of each country, based on adequate information. But we should always be aware that good information is a necessary condition of good policymaking, although it definitely is not a sufficient condition.

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19. Janet L. Norwood, "Reshaping a Statistical Program to Meet Legislative Priorities," Monthly Labor Review, vol. 100 (November 1977), pp. 6-11; Martin Ziegler, "Efforts to Improve Estimates of State and Local Unemployment," Monthly Labor Review, vol. 100 (November 1977), pp. 12-18.

WHAT DO TEENAGE UNEMPLOYMENT STATISTICS MEASURE?

By: Orley Ashenfelter

ABSTRACT

In the theory of labor markets, employment and labor supply are the unambiguous concepts that provide the focus for analysis and unemployment is merely the difference between them. In our labor force statistics, on the other hand, employment and unemployment are the focus for measurement and labor supply is merely the sum of them. As a result of this measurement scheme the question of whether measured unemployment is really a genuine part of the offer to sell labor is never raised because the set-up of the statistics has implicitly answered it. Meanwhile, the measured extent of teenage unemployment has continued to increase throughout the postwar period and this has led to a flurry of research activity geared to find an explanation for this phenomenon. At the same time there have begun to be doubts about what the teenage unemployment statistics actually measure and serious questions about whether they measure a phenomenon comparable to that for adult workers.

In this paper I set out a simple consistency check on the extent to which measured teenage unemployment behaves as if it were part of the offer to sell labor. I also apply this consistency test to the unemployment data for adult workers where it passes with flying colors. As it turns out, the measured unemployment data for some teenage groups does not seem to pass the same test. This necessarily raises some difficult questions about the actual economic content of these statistics and suggests an important agenda for future research.

The basic idea behind these consistency tests is that if labor supply were a known quantity and if unemployment were measured without error there would be a one-to-one negative relationship between employment and unemployment for any particular group. Of course, the labor supply of any group is unobservable, but if two groups offered the same quantity of labor to the market then there would still be an observable one-to-one negative relationship between the differences in employment and unemployment for the two groups. I implement this scheme empirically for male and female fourteen to fifteen, sixteen to seventeen, eighteen to nineteen, twenty to twenty-four and thirty-five to forty-four year-olds by assuming that the unobserved labor supply of blacks and whites is identical apart from a constant and steady trend. Although there are a number of econometric difficulties associated with this procedure, the results suggest that for males eighteen and over and for females twenty and over there is a clear negative relationship between employment and unemployment differences, but that for younger groups there is not. This suggests that considerable research and experimentation with the measurement of teenage unemployment should be undertaken before these statistics are taken at face value.

INTRODUCTION

In the theory of labor markets employment and labor supply are the unambiguous concepts that provide the focus for analysis and unemployment is merely the difference between them. In our labor force statistics, on the other hand, employment and unemployment are the focus for measurement and labor supply is merely the sum of them. As a result of this measurement scheme the question of whether measured unemployment is really a genuine part of the offer to sell labor is never raised because the set-up of the statistics has implicity answered it. Meanwhile, the measured extent of teenage unemployment has continued to increase throughout the postwar period and this has led to a flurry of research activity geared to find an explanation for this phenomenon. At the same time there have begun to be doubts about what the teenage unemployment statistics actually measure and serious questions about whether they measure a phenomenon comparable to that for adult workers.

In this paper I set out a simple consistency check on the extent to which measured teenage unemployment behaves as if it were a part of the offer to sell labor.* I also apply this consistency test to the unemployment data for adult workers where it passes with flying colors. As it turns out, the measured unemployment data for some teenage groups does not seem to pass the same test. This necessarily raises some difficult questions about the actual economic content of these statistics and suggests an important agenda for future research.

It is obviously important to get this issue clarified because quite a lot will be at stake in this area in future years. First, several new programs designed to affect the labor market status of teenagers are being developed and if these are to be evaluated in terms of their impact on teenage unemployment statistics we must know just what to expect. Second, the continuing process of analyzing the

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*Following the usual dictum that a graduate student who writes your paper receives no acknowledgement, while a graduate student who does most of the work on it receives a footnote reference, I am tempted to ignore the substantial assistance I have received from David Bloom in the preparation of this paper.

usefulness of the overall unemployment rate as an economic and social indicator necessarily requires the integration of discussions of the usefulness of the teenage unemployment statistics. Finally, decisions about the size and allocation of resources devoted to labor market programs for youth must inevitably be guided to some extent by the state of the labor market for young people and it is important to know whether the current unemployment measurement device for these groups is sufficient for this task.

The plan of the paper is as follows: The first section sets out some well known facts about the change in the employment of both black and white teenagers over the last twenty years. The second section contains the conceptual discussion of a simple test for the consistency of the observed movements in employment and unemployment of teenagers, while the third and fourth sections report on some initial empirical tests and modifications of these tests to cope with various econometric problems. Concluding remarks and issues for further research are contained in a final section.

SOME FACTS

Most of the basic facts about teenage employment are contained in Figure 1. As a benchmark, it may be seen that apart from a small drift upward, adult employment has remained at around 60% of adult population throughout most of the last two decades. Though more erratic and at a lower level, the employment/population ratio of white male teenagers (fourteen-to nineteen-years old) has followed a similar pattern. Employment/population ratios for white females, on the other hand, have drifted continuously upward in a qualitative pattern much the same as that for white female adults. For black youngsters, however, both the employment/population ratios of males and females have been trending steeply down for the last two decades. It is this latter, largely unexplained phenomenon, that has suggested a cause for alarm.

FIGURE 1

EMPLOYMENT/POPULATION RATIOS FOR ADULTS AND SELECTED CATEGORIES OF TEENAGERS, ANNUAL AVERAGES, 1954-1977.

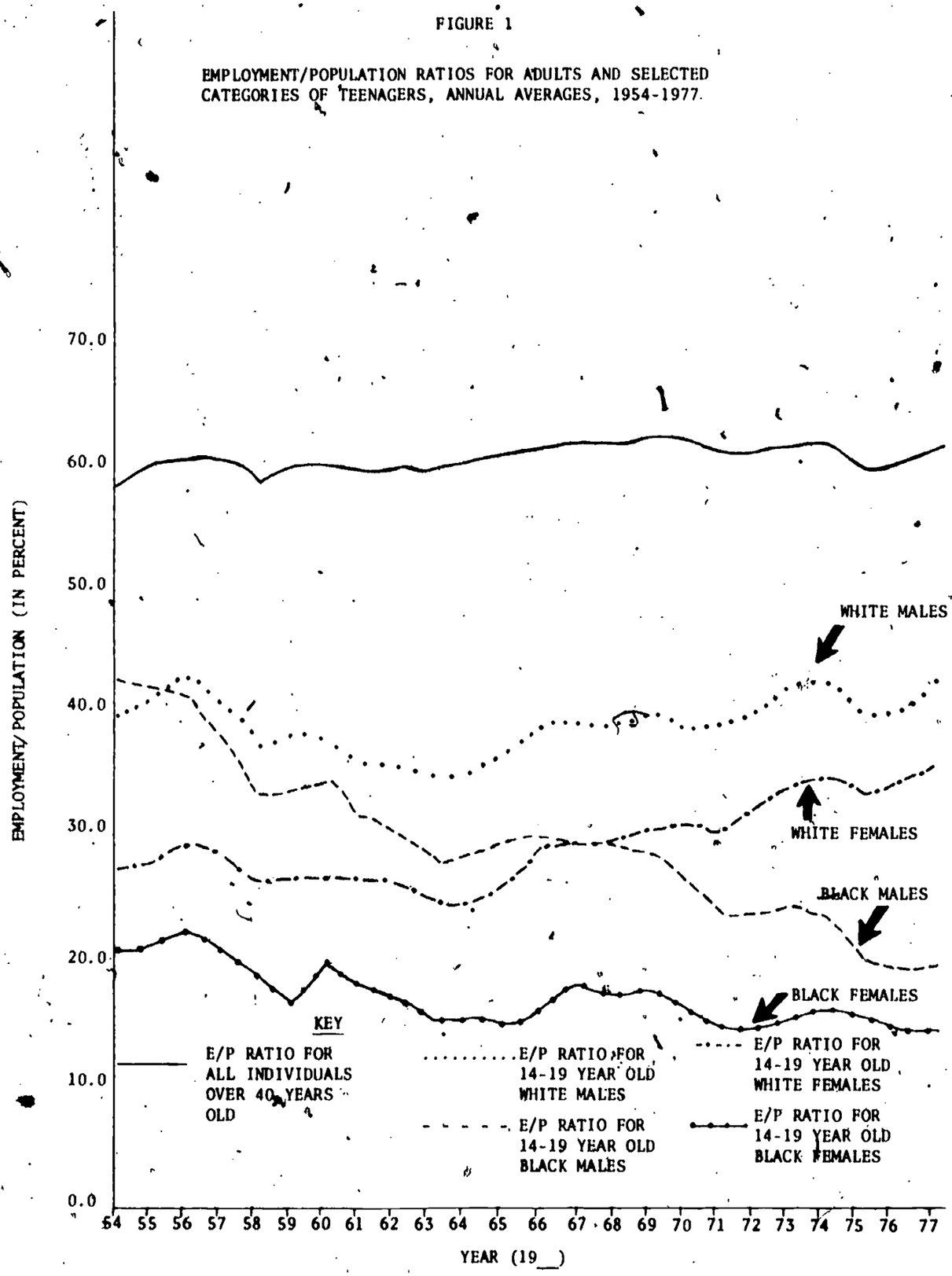

Table 1 contains a more systematic elaboration of these patterns. The coefficients in this table give the annual average trend in the employment/population ratio of the indicated group while holding constant the employment/population ratio of all adults aged thirty-five to forty-four. Thus, these coefficients may be thought of as the trends in teenage employment/population ratios relative to those of adults in their prime working years. This table indicates the same basic facts as Figure 1 and establishes an additional one. First, there has been no discernible trend in the relative employment/population ratios of whites aged fourteen through seventeen in the last two decades, although there has been some secular decline for white male eighteen- and nineteen-year-olds. Second, there has been a substantial decline in the relative employment/population ratio of all black teenagers and this decline has been especially sharp for black males. Finally, Table 1 also indicates that the decline of the relative employment/population ratio for black males extends to the twenty- to twenty-four-year-old group as well.

In the face of the massive decline in the employment/population ratio of black teenagers it would hardly be surprising to find that the unemployment of this group had increased considerably relative to its population size. Indeed, this has been precisely what has happened as black teenage unemployment/population rates have increased from three to ten percentage points depending on the specific age-sex group. What is more puzzling, however, is that white teenage unemployment has also increased significantly relative to its population size. It is this last phenomenon that leads to the question of just what economic interpretation it is sensible to give to the measured teenage unemployment statistics. After all, is it not surprising that the increasing employment of white teenagers is associated with simultaneously increasing unemployment for this group while just the reverse is the case for black teenagers?

A natural initial response is that simultaneously increasing employment/population and unemployment/population ratios for white teenagers indicates that their labor supply has increased secularly as well.

TABLE 1

AVERAGE ANNUAL CHANGES IN THE EMPLOYMENT/POPULATION RATIO OF TEENAGERS RELATIVE TO ALL 35-44 YEAR-OLD ADULTS, 1954-1977

Age Group	Black Males	White Males	Black Females	White Females
14-15 Year-Olds	-.0100 (.0030)	-.0031 (.0023)	-.0048 (.0030)	.0023 (.0016)
16-17 Year-Olds	-.0170 (.0044)	-.0046 (.0031)	-.0051 (.0037)	-.0005 (.0024)
18-19 Year-Olds	-.0196 (.0056)	-.0077 (.0025)	-.0052 (.0065)	-.0012 (.0028)
20-24 Year-Olds	-.0168 (.0052)	-.0081 (.0026)	-.0042 (.0046)	.0058 (.0021)

Source: Regressions of the first-differences of the annual average employment/population ratio of the indicated group on the similar first-differences of the employment/population ratio of 35-44 year-old adults. The coefficients in the table are the constant term estimates (and estimated standard errors) from these regressions. The data are based on the Current Population Survey estimates and are taken from various issues of the Monthly Labor Review.

This merely restates the known facts, however, because the conventional statistics define the labor supply as the sum of employment and unemployment. The question therefore naturally arises as to whether the actual increase in measured teenage unemployment is a genuine part of the true but generally unobserved labor supply.

A CONSISTENCY TEST

In the absence of forced work, the labor supply necessarily includes all employed workers and may also include other workers that are not employed. In stylized Keynesian models of the labor market, unemployment represents hours that workers are unable to sell on the market at the current (or prevailing) wage rate for one reason or another.[1] This disequilibrium component of the labor supply is presumably related at least loosely to measured unemployment statistics. In order to investigate this relationship in concrete terms suppose that for the $i^{\underline{th}}$ group of workers true unemployment U^* is related to measured unemployment U as

$$(1) \quad U^*_{it} = \alpha_i U_{it} + \beta_i + v_{it},$$

where α_i and β_i are parameters and v_{it} is an error of measurement with mean of zero. The true labor supply is $L_{it} = E_{it} + U^*_{it}$ so that from (1) it follows that

$$(2) \quad E_{it} + \alpha_i U_{it} + \beta_i + v_{it} = L_{it}.$$

The implicit assumption in the conventional labor force statistics is that $\beta_i = 0$ and $\alpha_i = 1.0$ for all groups and the variance of v results only from sampling errors. In principle it should be possible to test one or more of these assumptions.

It is worth observing that α_i need not be smaller than unity because the true labor supply may be larger than the mere sum of measured employment and unemployment. In this case the quantity $\beta_i + (\alpha_i - 1) v_i$

1. For a rather more formal discussion see Orley Ashenfelter, "Unemployment as Disequilibrium in a Model of Aggregate Labor Supply," Working Paper No. 104, Industrial Relations Section, Princeton University, Princeton, N.J., November 1977.

would measure discouraged workers who did not report themselves as unemployed for one reason or another. It is also worth observing that the case $\alpha = 0$ does not imply there is no "true" unemployment because β may be very large. The case $\alpha = 0$ does imply, however, that movements in measured unemployment are poor estimates of movements in true unemployment.

Equation (2) suggests that the parameters α_i and β_i might be estimatable by regression after rewriting it as

$$(3) \quad E_{it} = L_{it} + \beta_i + \alpha_i U_{it} + v_{it} .$$

Of course, L_{it} is not observed and so further hypotheses are clearly required to implement this approach. To proceed suppose that the labor supply of two groups is known to be the same apart from some estimatable function. In particular, assume that for the i^{th} age-group the labor supply of black and white workers of the same sex is related as

$$(4) \quad L_{by} = L_{wt} + \gamma_0 + \gamma_1 t + \varepsilon_t ,$$

where ε_t is a disturbance term. The logic of equation (4) is that the same sorts of variables, such as the wage rate and family income, determine the labor supply of black and white workers and these variables ought to move smoothly relative to each other over time.

Finally, writing (3) for black and white workers separately, subtracting the latter from the former, and substituting (4) leads to

$$(5) \quad E_{bt} - E_{wt} = \gamma_0 + (\beta_b - \beta_w) + \gamma_1 t + \alpha_w U_{wt} - \alpha_b U_{bt} + \varepsilon_t' .$$

Although there are a number of econometric difficulties that I shall take up below, equation (5) suggests that a simple regression of the difference in the employment/population rates between blacks and whites on the unemployment/population rates of blacks and whites can, in principle, identify the paramaters α_b and α_w. Note, however, that the parameters β_i and γ_0 cannot be identified so that whether measured unemployment is an upward or downward biased estimate of true unemployment cannot be determined either. Still, estimates of the α_1 parameters are suggestive of the extent to which movements in measured unemployment over time have an unambiguous Keynesian-style interpretation.

Finally, in the case where the parameters α_b and α_w are equal it is possible to write (5) as

$$(5a) \quad E_{bt} - E_{wt} = \gamma_0 + (\beta_b - \beta_w) + \gamma_1 t + \alpha (U_{wt} - U_{bt}) + \varepsilon'_t .$$

The form of the estimating equation brings out clearly the simple logic of the empirical exercise I shall report below. In effect, the assumption of a close relationship between the labor supply of blacks and whites implies that with clean measurement of unemployment the slope of the relationship between differences in the employment/population ratios of blacks and whites and differences in the unemployment/population ratios of blacks and whites should be minus unity. It is to my preliminary efforts to estimate this relationship that I shall turn next.

INITIAL ESTIMATES

The estimates of equation (5a) in Tables 2 and 3 for the age groups indicated are based on annual average employment and unemployment per capita over the period 1954 to 1977, which is the period for which consistent data on teenagers are available. I have used annual averages so as to avoid the adjustments in the seasonal pattern of these data that would be necessary using quarterly or monthly data. This strong seasonal pattern also may imply more complicated labor decisions than would be captured by so simple a specification as equation (4) and so it seemed best to avoid these difficulties at this point. I have also fitted these equations in first-differences throughout because initial experimentation with a standard procedure that allowed the disturbances to follow a first-order autoregression produced fitted serial correlation coefficients that were near unity for all groups.

The results for males in Table 2 clearly suggest that for the older groups α is near unity. The results for thirty-five to forty-four-year-olds in Table 2 are included to see how the consistency test implied by equation (5a) works for a prime-aged group where unemployment presumably has the least ambiguous interpretation. As can be seen

TABLE 2.

LEAST SQUARES ESTIMATES OF EQUATION (5a)
FOR MALES, 1954-1977

Age Group	Estimate[a] of: Constant	α	R^2	Durbin-Watson Statistic
14 - 15	-.0075 (.0033)	-.922 (.484)	.147	1.71
16 - 17	-.0103 (.0031)	.535 (.178)	.300	2.73
18 - 19	-.0113 (.0038)	1.06 (.190)	.596	2.09
20 - 24	-.0051 (.0026)	.998 (.188)	.574	1.89
35 - 44	-.0014 (.0011)	1.02 (.109)	.808	1.98

[a] Estimated standard errors in parentheses. The data are from the same source as noted in Table 1.

TABLE 3

LEAST SQUARES ESTIMATES OF EQUATION (5a)

FOR FEMALES, 1954-1977

Age Group	Estimate[a] of: Constant	α	R^2	Durbin-Watson Statistic
14 - 15	-.0082 (.0030)	-.702 (.464)	.098	2.49
16 - 17	-.0081 (.0033)	-.204 (.323)	.0186	2.86
18 - 19	-.0038 (.0059)	.047 (.343)	.000	2.10
20 - 24	-.0055 (.0043)	1.30 (.438)	.306	1.39
35 - 44	-.0059 (.0022)	.381 (.277)	.082	1.41

[a] Estimated standard errors in parentheses. The data are from the same source as noted in Table 1.

from the table, $\hat{\alpha} = 1.02$ for this group and this estimate is quite precise in the statistical sense, so that these data clearly pass the test. Though somewhat less precise, the estimates for twenty- to twenty-four year-olds and eighteen-year-olds are also very close to unity. The estimate for sixteen- to seventeen-year-olds, on the other hand, is near one-half and is precisely enough estimated that both the hypotheses that $\alpha = 1.0$ and $\alpha = 0.0$ may be firmly rejected. Finally, the estimate of α for fourteen- to fifteen-year-olds has a perverse sign and is estimated precisely enough so that even though the hypothesis $\alpha = 0$ cannot be rejected, the data are not consistent with a value much larger than zero either. In sum, the measured unemployment data for male fourteen- and fifteen-year-olds, and to a lesser extent for sixteen- and seventeen-year-olds, does not behave as would be expected if they were free of measurement error. By comparison, the data for older groups does behave in the expected fashion.

As can be seen from Table 3, the estimates of α for females are imprecisely estimated compared to those for males. Although this may be a result of greater measurement error variance I suspect it is more a result of a larger variance in the relationship between black and white labor supply measures in equation (4) and is a reflection of the known greater volatility in labor supply for women. In either case, however, the estimates of α for all three of the age groups from fourteen through nineteen are not significantly different from zero. Moreover, they are precisely enough estimated that the hypothesis $\alpha = 1.0$ can be firmly rejected. For the twenty- to twenty-four-year-old group $\alpha = 1.3$ and the hypothesis $\hat{\alpha} = 0$ can certainly be ruled out. For the thirty-five to forty-four-year-old group, on the other hand, the estimate of α is closer to zero than unity, but the latter hypothesis can only barely be rejected by the usual tests. Taken together, these results raise serious questions about the interpretation of the measured unemployment statistics for all teenage females.

Table 4 contains the results of relaxing the assumption $\alpha_b = \alpha_w$ and fitting equation (5) to the data for the various age groups. As can be seen from the table, apart from the increase in estimated stand-

TABLE 4

ESTIMATES OF α_b AND α_w FROM EQUATION (5)[a]

Age Group	Estimates for Males		Estimates for Females	
	α_b	α_w	α_b	α_w
14 - 15	-.883 (.513)	-1.36 (1.64)	-.657 (.474)	.770 (2.14)
16 - 17	.531 (.166)	.326 (.453)	-.129 (.329)	.624 (.821)
18 - 19	1.08 (.197)	.942 (.268)	.091 (.364)	-.224 (.717)
20 - 24	.924 (.172)	.630 (.229)	1.22 (.425)	.396 (.811)
35 - 44	.976 (.171)	.903 (.346)	.520 (.304)	1.12 (.732)

[a] Estimated standard errors in parentheses.

ard errors the results for males are changed very little compared to those in Table 2. Although none of the differences between the estimates of α_b and α_w for males in the table are statistically significant, there is a clear indication that the α estimates for blacks are larger than for whites. This is especially the case for twenty- to twenty-four-year-olds, but it is also the case for all of the other groups as well. Taken at face value these results suggest that the dramatic increases in measured black unemployment rates among the eighteen and over categories are indeed serious constraints on the labor market choices of these workers.

The point estimates for females in Table 4 are also generally unchanged from those in Table 3, but they are even more poorly determined in a statistical sense. As a result it seems pointless to try to draw further conclusions regarding female behavior from these results. Instead, I turn next to a number of econometric problems with these results, including especially an attempt to reduce the imprecision in the estimates of the α_i that is motivated by the imprecision of the estimates for females.

SOME COMPLICATIONS

In the absence of additional data the only way to increase the precision of the estimates of the α_1 parameters in Tables 2 and 3 is by the introduction of some plausible prior information into the estimation process. Since I expected that, if anything, these coefficients would be likely to increase with age this seemed like a plausible place to start. In particular, suppose we assume $\alpha_b = \alpha_w$ and array these coefficients by age so that i is now an index of age. Suppose further that $\alpha_i = \alpha(i)$ is a polynomial function in age. For a particular sex group, and ignoring thirty-five to forty-four-year-olds, this gives four points along the polynomial so that nothing is gained by taking a polynomial greater than degree three because this requires the estimation of four parameters. In fact, I started by assuming that the α_i fell along a first-degree polynomial, then estimated the resulting equations by the familiar "seemingly unrelated regressions" method,

and finally tested the implied restrictions.[2] Following this procedure sequentially led to a first-degree polynomial for the female coefficients and a second-degree polynomial for the male coefficients.[3] The estimates of the α_i following this procedure are contained in Table 5.

As can be seen from the table, the coefficient estimates for males change very little from the unrestricted estimates in Table 2 and there is very little gain in statistical precision either. On the other hand, the coefficient estimates for females in Table 5 are also little changed from the unrestricted estimates in Table 3, but estimated standard errors decline by almost one-third. The result is that previous conclusions about females become stronger, with the implication that the interpretation of measured female teenage unemployment rates is even more suspect.

A final serious shortcoming with the least squares estimates of equations (5) and (5a) is that the error terms in those equations may be correlated with the unemployment/population ratios used as right-hand variables in them. For example, a positive fillip to the error term in equation (4) implies that true black labor supply increases relative to true white labor supply. But if measured unemployment really is a component of the offer to sell labor so that $\alpha \neq 0$, then both measured black employment and measured black unemployment may increase. The result is that the composite error term in equation (5a)

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2. See Arnold Zellner, "An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias," Journal of the American Statistical Association, vol. 57(June 1962), pp.348-68.

3. The calculated F-ratio for testing the first-degree polynomial restriction against the unrestricted estimates for females was .05, with two and eight-four degrees of freedom. For males this calculated F-ratio was 6.24, which implies clear rejection of the restrictions. With the second degree polynomial the comparable F-ratio was .08 for males. As a matter of interest, the fitted polynomial for females was $\alpha_i = .99 + .25i$, where i = 1, 3, 5, and 8.5, and these correspond to the scaled midpoints of the fourteen to fifteen, sixteen to seventeen, eighteen to nineteen, and twenty to twenty-four age ranges. For males the fitted polynomial was $\alpha_i = 1.9 + 1.1i - .11i^2$. The coefficients in Table 5 are estimated values of α_i based on these equations.

TABLE 5

SEEMINGLY UNRELATED REGRESSION
ESTIMATES OF $\alpha = \alpha_b = \alpha_w$ CONSTRAINED TO
FOLLOW A POLYNOMIAL IN AGE

Age Group	Estimates[a] for	
	Males	Females
14 - 15	-.896 (.406)	-.753 (.308)
16 - 17	.491 (.121)	-.261 (.206)
18 - 19	1.03 (.148)	.231 (.182)
20 - 24	.878 (.175)	1.09 (.348)

[a] Estimated standard errors in parentheses.

will be correlated with the unemployment/population ratio used as an independent variable and the least squares estimator will be biased.

There are two points that may be made about this issue. First, this form of "simultaneity bias" need not invalidate an appropriate test of the hypothesis $\alpha=0$ based on the least squares estimates. After all, under this null hypothesis the error term and the unemployment ratio will be uncorrelated so that the probability of a type 1 error will be properly controlled even though the power of this test may be exceedingly low. Second, it is in principle possible to remedy this deficiency by adopting an appropriate instrumental variable estimator.

In practice I have experimented with a simple instrumental variable estimator for equation (5a) with only mixed success. I have used the employment/ population ratios for black and white thirty-five to forty-four-year-old adults as instruments for the difference between the unemployment/population ratios of the various younger groups. As could be predicted from the low explained variances for females in Table 3 this procedure led to estimated standard errors for the α coefficients for the female groups that were so large as to render the estimates themselves useless. The results for the male groups were somewhat better determined and they are contained in Table 6.

As can be seen from the table these estimates of the α_i coefficients for males are generally larger than the least squares estimates in Table 2. Still, the basic conclusions remain generally unchanged. For the fourteen- to fifteen-year-old group the estimate of α is essentially zero as before. For the sixteen- to seventeen-year-old group the estimate of α is now greater than unity, but its associated standard error is so large as to render this conclusion very weak. Clearly, better estimates along these lines would be useful and this may be a good topic for future research.

CONCLUSIONS

In this paper I have set out a simple consistency check on the extent to which measured teenage unemployment behaves as if it were a part of the offer to sell labor. The basic idea behind this consistency check is that if labor supply were a known quantity and if unemployment were measured without error there would be a one-to-one negative relationship between employment and unemployment. Of course, the labor supply of any group is unobserved, but if two groups offered the same quantity of labor to the market then there would still be an observable one-to-one negative relationship between the differences in employment and unemployment for the two groups, I implement this scheme empirically for male and female fourteen to fifteen, sixteen to seventeen, eighteen to nineteen, twenty to twenty-four, and thirty-five to forty-four year-olds by assuming that the unobserved labor supply of blacks and whites is identical apart from a constant and steady trend. Although there are a number of econometric difficulties associated with this procedure the results suggest that for males eighteen and over and for females twenty and over there is a clear negative relationship between employment and unemployment differences, but that for younger groups there is not. This suggests that considerable research and experimentation with the measurement of teenage unemployment should be undertaken before these statistics are taken at face value.

YOUTH PARTICIPATION RATES AND THE AVAILABILITY OF JOBS

By: Francine D. Blau

ABSTRACT

This paper uses data from the National Longitudinal Surveys to examine the relationship between local area unemployment rates and the labor supply behavior of youth aged eighteen to twenty-four in 1970. The net effect of the unemployment rate on the probability of labor force participation in 1970 is found to be negative. Net discouragement appears to be greater among young women than among young men, and to be larger among blacks than among whites. Since local labor market unemployment rates tend to be correlated over time, the coefficient on the unemployment rate variable in the participation regressions was held to approximate a long-term supply response to persistent intercity differences. The net impact of the unemployment rate on labor supply adjustments over a one-year period is also examined. No significant effect of the unemployment rate on the probability of labor force entry or exit between 1970 and 1971 is obtained.

These findings suggest that net effect of the ups and downs of the business cycle on the labor force participation of youth would not be very great. However, prolonged periods of high unemployment could produce net discouragement for this age group. At the level of the local labor market our results suggest the efficacy and importance of policies designed to stimulate aggregate demand in depressed labor markets.

INTRODUCTION

The level of economic activity may have both direct and indirect effects on young adults.* Economic conditions directly affect the probability of becoming unemployed and current earnings. In addition, the unemployment rate may indirectly affect youth by influencing their labor force participation decisions. This paper investigates the responsiveness of the labor supply of young men and women to the level of unemployment.

Economists view the response of labor supply to the unemployment rate as being the net result of two opposing effects. The additional worker effect predicts that, during times of high unemployment, if the primary earner(s) becomes (become) unemployed, other family members may enter or postpone exit from the labor force in order to maintain family income. Such individuals may leave the labor force when

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economic conditions improve and the primary earner(s) is (are) again employed on a regular basis. Alternatively, the discouraged worker effect holds that, during times of high unemployment, when individuals become unemployed, they may become discouraged and drop out of the labor force after a fruitless period of job search. Others may postpone labor force entry until economic conditions improve. Theoretically both these effects may operate simultaneously on labor force entries and exits to produce a net effect on labor force participation. The direction of this net effect must be determined empirically, although the cyclical sensitivity of labor supply behavior is expected to be greater for groups which have traditionally had a weaker attachment to the labor force, like married women and young adults.

Knowledge of the direction and magnitude of the net effect of the unemployment rate on the labor force participation of youth has extremely important policy implications. If the discouraged worker effect prevails, unemployment statistics will tend to underestimate the job creation task ahead for this group. This may result in the adoption of monetary and fiscal policies which are not sufficient to reach desired goals. In addition, to the extent that time out of the labor force is spent unproductively, young people will suffer negative effects on their subsequent earnings due to delayed labor force entry and/or breaks in their work histories.

If the additional worker effect is dominant, unemployment statistics will tend to overestimate the future need for jobs, possibly resulting in over-stimulatory macro-policies and exacerbated inflation problems. In addition, the need to supplement family income may cause young people to interrupt or curtail their schooling with negative consequences on their future earning power. In addition, to the extent that young people are concentrated in particular occupations or industries, accelerated entry during recessions would increase competition for these jobs and worsen employment conditions in these sectors.

The empirical evidence on the direction and magnitude of the discouraged-additional worker effect is mixed. Recent time series studies

suggest that, in most cases, the discouraged worker effect predominates, but that the negative effect of the unemployment rate on labor force participation is not very large.[1] Using gross flow data from the current population survey, Smith presents evidence suggesting that the observed cyclical sensitivity of the labor force is due to the increase in the number of unemployed workers during a recession coupled with the strong likelihood of leaving the labor force when unemployed. According to Smith, postponement of labor force entry during times of high unemployment does not play an important role.[2] Such time series studies suffer from a lack of detailed data on the personal characteristics of workers. This means that the time series results do not unambiguously measure the impact of changes in the unemployment rate on the labor supply decisions of otherwise identical individuals, since the estimated relationship is affected by compositional factors as well.

Cross-sectional studies may be regarded as measuring the long-run impact of unemployment on participation rates. They generally indicate that the impact of the local labor market unemployment rate on the area labor force participation rate is negative, significant, and larger than the results obtained for time series studies.[3] However, such findings have been questioned by Fleisher and Rhodes because of the aggregation problems entailed in the use of average data for the local labor market. After correcting for these problems, Fleisher and

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1. See, for example, Michael Wachter, "A Labor Supply Model for Secondary Workers," The Review of Economcs and Statistics, vol. 54 (May 1972) and Peter Barth, "Unemployment and Labor Force Participation," Southern Economic Journal, vol. 34 (January 1968). For an excellent review of the early literature on this subject, see Jacob Mincer, "Labor Force Participation and Unemployment: A Review of Recent Evidence" in Margaret Gordon and Robert Gordon, eds., Prosperity and Unemployment (New York: John Wiley and Sons, 1966).
2. Ralph Smith, "The Discouraged Worker in a Full Employment Economy," Proceedings of the American Statistical Association, Business and Economics Section, 1974.
3. See, for example, William Bowen and T. Aldrich Finegan, The Economics of Labor Force Participation (Princeton, N.J.: Princeton University Press, 1969).

and Rhodes find no evidence that the unemployment rate has a significant negative effect on the labor force participation rate.[4] However, using microdata for a sample of mature married women, Blau found evidence of significant net discouragement among whites and a significant additional worker effect among blacks.[5]

This paper uses data from the National Longitudinal Surveys of Young Men and Women to examine the impact of the unemployment rate on labor force participation.[6] The sample is restricted to youth aged eighteen to twenty-four in 1970, the initial year of the analysis. A cross-sectional approach is used in which the impact of the local labor market unemployment rate is ascertained while the effects of other variables which influence labor supply behavior are held constant. Since data on individuals are used, aggregation problems are not an issue.

The net effect of the level of unemployment is investigated by introducing the local labor market unemployment rate into regression equations estimating: (1) the probability that a respondent will participate in the labor force during the 1970 survey week, (2) the condi-

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4. Belton Fleisher and George Rhodes, "Unemployment and the Labor Force Participation of Married Men and Women: A Simultaneous Model," The Review of Economics and Statistics, vol. 58 (November 1976). See also Belton Fleisher and George Rhodes, "Individual Labor Force Decisions and Unemployment in Local Labor Markets: A Foundation for Policy Planning," unpublished working paper, undated. The authors claim that OLS estimates using aggregate cross-sectional data are biased, since unemployment rates in local labor markets are in fact determined simultaneously with labor force participation rates.

5. Francine Blau, "The Impact of the Unemployment Rate on Labor Force Entries and Exits," unpublished paper presented at the Secretary of Labor's Invitational Conference on the National Longitudinal Surveys of Mature Women, Washington, D.C., January 26, 1978.

6. For a description of the National Longitudinal Surveys data for these cohorts see Paul Andrisani and Andrew Kohen, Career Thresholds: A Longitudinal Study of the Educational and Labor Market Experience of Male Youth, vol. 5 (Columbus, Ohio: Center for Human Resource Research, Ohio State University, 1975) and Frank Mott, et al., Years for Decision: A Longitudinal Study of the Educational, Labor Market and Family Experiences of Young Women, 1968 to 1973, vol. 4 (Columbus, Ohio: Center for Human Resource Research, Ohio State University, 1977).

tional probability that a respondent will enter the labor force by the 1971 survey week (given s/he is out of the labor force at the time of the 1970 survey), and (3) the conditional probability that a respondent will exit the labor force by the 1971 survey week (given s/he is in the labor force at the time of the 1970 survey). Local unemployment rates tend to be correlated over time. Thus, the measured impact of the unemployment rate on the participation probability (specification one) would reflect long-term adjustments to persistent intercity differences. Where the focus is upon labor force entry and exit, as in specifications two and three, a one-year period has been allowed for the change in labor supply behavior to take place. If, for example, there are considerable transaction costs involved in moving into and out of the labor force,[7] the impact of the unemployment rate on supply behavior may be less in the case of entry and exit probabilities than in the case of the participation probabilities. Moreover, both types of cross-sectional estimates may exceed the cyclical sensitivity of labor supply to short-term changes in the unemployment rate.[8]

In the participation regression, the dominance of the discouraged worker effect would be indicated by a negative coefficient on the unemployment rate, the dominance of the additional worker effect, by a

7. James Heckman and Robert Willis, "A Beta-logistic Model for the Analysis of Sequential Labor Force Participation by Married Women," Journal of Political Economy, vol. 85 (February 1977).

8. On the other hand, the sample includes individuals who changed their residences between 1970 and 1971. Such an opportunity to alter the labor market conditions one faces through intercity migration has no counterpart when the national economic situation is the relevant context. This consideration would reduce the magnitude of the upward bias discussed in the text (of the cross-sectional as compared to the cyclical responses), but most probably would not eliminate it. It was decided to include individuals who changed their residences over the period so as to eliminate any selectivity bias that would result from restricting the sample to those who did not attempt to alter their situation. See Edward Kalachek, Donald Larson and Fredrick Raines, "An Investigation of Dynamic Labor Supply Adjustment," unpublished working paper prepared for the Employment and Training Administration, U.S. Department of Labor, March 1977, for an analysis which considers the question of the speed with which labor supply adjustments in work hours are made.

positive coefficient. In the entry and exit regressions, an increase in the unemployment rate would, other things equal, work to decrease the probability of entering the labor force and/or to increase the probability of exiting the labor force, if the discouraged worker effect predominates. If the additional worker effect is dominant, a rise in the unemployment rate would, all else equal, be associated with an increase in the probability of entering the labor force and/or a decrease in the probability of exiting the labor force.

The labor force status of the young men and women in the sample is summarized in Table 1. In this age group, male labor force participation rates were one quarter to a third higher than female rates in 1970. Women were somewhat more likely than men to experience unemployment, while the incidence of unemployment among blacks was considerably higher than among whites. Young women were four times as likely as young men to exit from the labor force between 1970 and 1971, and one half to three fifths as likely to enter the labor force between those two years.

THE MODEL

The labor force participation decision of an individual may be conceptualized as one in which the individual and his or her family determine the allocation of each member's time between work in the market and various nonmarket activities such as school attendance (investment in future market productivity), home work and leisure.[9] This decision process involves comparing the relative advantages of market and nonmarket activities at each point in time. An individual participates in the labor force at time t if the value of his or her time in the market, w_t, exceeds the value of his or her time in nonmarket activities, w_t^*.

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9. See, for example, Gary Becker, "A Theory of the Allocation of Time," The Economic Journal, Vol. 75 (September 1965); Jacob Mincer, "Labor Force Participation of Married Women: A Study of Labor Supply" in H. Gregg Lewis, ed., Aspects of Labor Economics, A Conference of the Universities--National Bureau Committee of Economic Research (Princeton, N.J.: Princeton University Press, (1962); Reuben Gronau, "The Intrafamily Allocation of Time: The Value of the Housewives' Times," American Economic Review, vol. 63 (September 1973); and James Heckman, "Shadow Prices, Market Wages and Labor Supply," Econometrica, vol. 42 (July 1974).

TABLE 1

LABOR FORCE STATUS, 1970-71

(percent)

	Whites	Blacks
Males	(n = 1840)	(n = 681)
Labor Force Status, 1970		
Employed	75.1	74.6
Unemployed	6.3	12.0
Out of Labor Force	18.6	13.4
Change in Status, 1970-71		
Entry rate[a]	55.7	60.4
Exit rate[b]	4.8	5.6
Females	(n = 2163)	(n = 851)
Labor Force Status, 1970		
Employed	54.6	46.2
Unemployed	6.7	13.0
Out of Labor Force	38.7	40.8
Change in Status, 1970-71		
Entry rate[a]	29.2	37.5
Exit rate[b]	20.0	23.4

[a] Proportion of those respondents who were out of the labor force during the 1970 survey week who had entered by the 1971 survey week.

[b] Proportion of those respondents who were in the labor foce during the 1970 survey week who had exited by the 1971 survey week.

(w_t^* is the shadow price of time in nonmarket activities when zero work hours are supplied to the market.) S/he does not participate if w_t is less than w_t^*. The tendency of many families to practice sex role specialization in the allocation of market and nonmarket tasks means that the same variables will not necessarily influence the value of w^* in the same way for men and women. For example, other things equal, marriage may raise w^* for women, but lower it for men. It is also important to point out that labor market discrimination on the basis of race or sex may influence labor supply decisions by lowering w. In the context of the labor supply model, individuals are viewed as pursuing optimizing behavior. However, outcomes are not necessarily optimal from a social point of view, since they may reflect a disadvantaged labor market status for some individuals.[10]

An individual may change his or her labor force status between time t and t+1 if the value of market and/or home time changes. The effect of a given change in the value of market or home time depends, however, on the initial situation, that is, the relative magnitudes of w_t and w_t^*. For example, suppose over the course of a year a woman has an additional child. This is expected to increase the value of her nonmarket time. If she was previously in the labor force, will she now exit? Not necessarily. If the value of her market time initially greatly exceeded the value of her nonmarket time, then it is possible that she will remain in the labor force. On the other hand, were the gap between w_t and w_t^* smaller, she might exit. Thus, the probability of labor force exit or entry depends on both the initial values of home and market time and on the changes in those values that have occurred over the period.

While the notions of the value of market time and nonmarket time are useful theoretical concepts, it is generally not possible to observe directly or measure w_t and w_t^*. This is obviously the case with

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10. Marianne Ferber and Bonnie Birnbaum ("The 'New Home Economics': Retrospects and Prospects," Journal of Consumer Research, vol. 4 (June 1977) have criticized household decision-making models for their assumption of rationality and underemphasis of the role of tradition in determining the division of tasks within the family.

respect to the value of nonmarket time. The value of market time, in the form of the market wage rate, can be observed for individuals who are currently employed. However, even in this case, it is not clear that the observed wage rate fully represents all aspects of the value of market time. The value of an individual's time spent in the market depends on the nonpecuniary as well as the pecuniary aspects of his or her work. It depends not simply on the current wage, but on the prospects for wage growth in the future and the wage penalty associated with the labor force withdrawal in each type of work. In addition, if an individual becomes unemployed, the alternative opportunities open to him or her must also be considered,[11] and market conditions must be taken into account.

Thus it may be both necessary and desirable to represent both w_t and w_t^* by the set of exogenous variables that determine them, rather than by their actual values. In this study, labor supply behavior is explained by a vector of personal characteristics, including race, education, potential experience, health, marital status, number of dependents, and net family assets, and labor market characteristics, including the labor market unemployment rate, the size of the local labor market and southern residence (Table 2).

In the exit regression, job characteristics such as union coverage and occupation are included to represent such factors as the nonpecuniary aspects of work, opportunities for wage growth through employment and the wage penalties for discontinuous participation. However, the ability to locate a job with specific characteristics may depend on economic conditions in the locality. In addition, job characteristics may represent self-selection as well as environmental factors. Thus results are presented both with and without these variables included.

In both the entry and exit regressions, the impact of changes over the 1970-71 period are considered. Changes in some of the explanatory variables were not considered to be solely causes of changes in

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11. That is, the whole wage distribution must be considered.

TABLE 2

VARIABLE DEFINITIONS

Dependent Variables

ILF	Dummy variable equaling one if respondent was in the labor force during the 1970 survey week, and zero otherwise.
NL	Dummy variable equaling one if respondent was in the labor force during the 1971 survey week (given respondent was out of the labor force at the time of the 1970 survey), and zero otherwise.
LN	Dummy variable equaling one if respondent was out of the labor force during the 1971 survey week (given respondent was in the labor force at the time of the 1970 survey), and zero otherwise.

Explanatory Variables

RACE	Dummy variable equaling one if respondent is black, and zero otherwise.
ED	Highest grade attained (years).
POTEXP	Potential labor market experience = Age - Education - Six. Experience is constrained not to begin before age 14.
HEALTH	Dummy variable equaling one if health limits the kind or amount of work the respondent can do, and zero otherwise.
MSP	Dummy variable equaling one if respondent is married spouse present, and zero otherwise.
DEPS	Number of dependents, excluding spouse.
ASSET	Net family assets ($1,000s).
UNION	Dummy variable equaling one if respondent's wages are set by collective bargaining, and zero otherwise.
PTM	Dummy variable equaling one if respondent is a professional, technical or managerial worker, and zero otherwise.
SERV	Dummy variable equaling one if respondent is a service worker, and zero otherwise.
UE	Local labor market unemployment rate (annual average).
SOUTH	Dummy variable equaling one if respondent resides in the south, and zero otherwise.
SIZE	Size of local labor market (100,000s).

TABLE 2
VARIABLE DEFINITIONS (con'd.)

CHDEP	Change in number of dependents.
CHMSP	Dummy variable equaling one if respondent changes marital status to married spouse present, and zero otherwise.
CHWDS	Dummy variable equaling one if respondent changes marital status from married spouse present to widowed, divorced or separated, and zero otherwise.
CHIH	Dummy variable equaling one if respondent's health improves, and zero otherwise.
CHDH	Dummy variable equaling one if respondent's health deteriorates, and zero otherwise.
UERACE	UE X RACE.

the individual's labor force behavior. For example, the magnitude of assets might change as other family members respond to a change in the individual's behavior. In addition, changes in assets over the period may be due to economic conditions, and thus should be omitted so that the full effect of economic conditions is captured by the unemployment rate variable. The impact of changes in educational attainment over the period would also be ambiguous as to causation. The focus is upon changes in health, marital status and number of dependents. It may be argued that changes in labor force status, marital status and number of dependents between 1970 and 1971 are all determined simultaneously. The assumption made here is that changes in marital status and number of dependents are determined prior to the change in labor force behavior. This means that these variables will be uncorrelated with the error term so that unbiased parameter estimates may be obtained with ordinary least squares. However, in this case also, the regression results are presented with and without these variables included.

EMPIRICAL RESULTS

The regression results obtained using ordinary least squares are shown in Table 3 for young men and Table 4 for young women.[12] The relatively low adjusted R^2's for the regressions are characteristic of cross-sectional studies, particularly in the case of binary dependent variables. In addition, small sample size is a problem in the case of the male entry regression.

The strongest results for the unemployment rate are found in the labor force participation regressions (equation 1). The coefficient on the unemployment variable is negative and significant in the female regression and negative and larger than its standard error in the male regression. The inclusion of a racial interaction term in equation 2 suggests that net discouragement is greater among blacks than whites (although the racial difference is not significant in the case of males). Other things equal, a one percentage point rise in the labor market unemployment rate would result in a decrease of 1.06 percentage

12. Considerations of time precluded experimentation with the more appropriate logit or probit specifications.

TABLE 3

REGRESSION RESULTS: YOUNG MEN

(Standard Errors)

Explanatory Variables	Participation (ILF)		Entry (NL)			Exit (LN)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Personal Characteristics (1970)							
RACE	0.03946[b]	0.05564	-0.01521	-0.02234	0.02142[c]	0.025292[b]	0.02483[b]
	(0.01807)	(0.04351)	(0.07053)	(0.07178)	(0.01262)	(0.01272)	(0.01279)
ED	0.00212	0.00211	0.01271	0.01462	-0.00519	-0.00437	-0.00403
	(0.00459)	(0.00459)	(0.01974)	(0.02007)	(0.00315)	(0.00333)	(0.00334)
POTEXP	0.03386[a]	0.03388[a]	0.03977[b]	0.04192[b]	-0.01285[a]	-0.01271[a]	-0.01226[a]
	(0.00442)	(0.00443)	(0.01956)	(0.01968)	(0.00298)	(0.00300)	(0.00304)
HEALTH	-0.03878	-0.03891	0.04885	0.20517	-0.00100	0.00011	0.00328
	(0.02614)	(0.02615)	(0.10153)	(0.16783)	(0.01945)	(0.01944)	(0.03198)
MSP	-0.13631[a]	0.13624[a]	0.24570[c]	0.24661[c]	-0.01885	-0.01824	-0.02392[c]
	(0.01967)	(0.01967)	(0.14469)	(0.14755)	(0.01270)	(0.01273)	(0.01410)
DEPS	0.00919	0.00926	-0.00583	-0.00444	0.00184	0.00206	-0.00062
	(0.01052)	(0.01052)	(0.12046)	(0.12138)	(0.00667)	(0.00667)	(0.00751)
ASSET	0.00125	0.00126	-0.01227	-0.01181	-0.00020	-0.00020	-0.00022
	(0.00095)	(0.00095)	(0.01179)	(0.01182)	(0.00058)	(0.00058)	(0.00058)
Job Characteristics (1970)							
UNION						-0.01872	-0.01638
						(0.01196)	(0.01201)
PTN						-0.00841	-0.00902
						(0.01579)	(0.01579)
SERV						-0.03349[b]	-0.03426[b]
						(0.01844)	(0.01843)

TABLE 3

REGRESSION RESULTS: YOUNG MEN
(continued)

Explanatory Variables	Participation (ILF)		Entry (NL)			Exit (LN)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Labor Market Characteristics (1970)							
UE	-0.00545	-0.00445	0.00298	0.00157	-0.00212	-0.00183	-0.00180
	(0.00357)	(0.00433)	(0.01240)	(0.01247)	(0.00249)	(0.00250)	(0.00249)
SOUTH	-0.04592[a]	-0.04558[a]	0.10441	0.09188	-0.02519[b]	-0.02816[b]	-0.02674[b]
	(0.01763)	(0.01766)	(0.06355)	(0.06490)	(0.01223)	(0.01241)	(0.01242)
SIZE	0.00015	0.00015	0.00113	0.00113	0.00028	0.00029	0.00028
	(0.00070)	(0.00070)	(0.00250)	(0.00251)	(0.00049)	(0.00049)	(0.00049)
Changes (1970-71)							
CHDEP				0.06159			-0.00678
				(0.04716)			(0.00811)
CHSP				-0.05641			-0.04286[b]
				(0.11789)			(0.01708)
CHWDS				(n.a.)			0.01697
							(0.03744)
CHLH				-0.24049			-0.00220
				(0.20266)			(0.03920)
CHDH				-0.03670			0.01539
				(0.14002)			(0.02612)
Interaction							
UERACE		-0.00310					
		(0.00758)					

TABLE 3.

REGRESSION RESULTS: YOUNG MEN
(continued)

Explanatory Variables	Participation (ILF)		Entry (NL)			Exit (LN)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant Term	0.71350	0.70821	0.31490	0.29625	0.16322	0.16021	0.16179
Adjusted R^2	0.107	0.107	0.018	0.016	0.021	0.023	0.025
F-statistic	29.864	27.154	1.649	1.418	4.745	4.077	3.413
Observations	2398	2398	353	353	1717	1717	1717

n.a. not applicable.

[a] Significant at the 1% level on a two-tailed test.

[b] Significant at the 5% level on a two-tailed test.

[c] Significant at the 10% level on a two-tailed test.

TABLE 4. REGRESSION RESULTS: YOUNG WOMEN

(Standard Errors)

Explanatory Variables	Participation (ILF)		Entry (NL)			Exit (LN)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Personal Characteristics (1970)							
RACE	0.03069	0.16132[a]	0.09267[a]	0.07999[b]	0.01748	0.02683	0.01933
	(0.02284)	(0.05738)	(0.03535)	(0.03583)	(0.02502)	(0.02508)	(0.02507)
ED	0.05843[a]	0.05848[a]	0.01737[b]	0.01687[c]	-0.03738[a]	-0.03760[a]	-0.03309[a]
	(0.00593)	(0.00592)	(0.00880)	(0.00878)	(0.00702)	(0.00776)	(0.00771)
POTEXP	0.03955[a]	0.03986[a]	-0.01873[b]	-0.01840[c]	-0.02337[a]	-0.022390[a]	-0.02429[a]
	(0.00573)	(0.00572)	(0.00938)	(0.00941)	(0.00614)	(0.00615)	(0.00610)
HEALTH	-0.08587[b]	-0.08572[b]	0.00403	-0.08598	0.08238	0.07335	0.02752
	(0.04299)	(0.04295)	(0.05908)	(0.09863)	(0.05179)	(0.05160)	(0.07836)
MSP	-0.11871[a]	-0.11820[a]	-0.04093	-0.05466	0.06078[a]	0.061464[a]	0.07437[a]
	(0.02202)	(0.02200)	(0.03629)	(0.03911)	(0.02330)	(0.02319)	(0.02477)
DEPS	-0.08592[a]	-0.08687[a]	-0.01135	-0.01214	0.03505[b]	0.03245[b]	0.05217[a]
	(0.01202)	(0.01202)	(0.01771)	(0.01846)	(0.01421)	(0.01416)	(0.01445)
ASSET	-0.00044	-0.00049	-0.00161	-0.00140	0.00145	0.00142	0.00108
	(0.00085)	(0.00085)	(0.00121)	(0.00120)	(0.00099)	(0.00099)	(0.00098)
Job Characteristics (1970)							
UNION						-0.08794[a]	-0.09249[a]
						(0.02697)	(0.02655)
PTM						0.04882	0.03445
						(0.03489)	(0.03443)
SERV						0.06670[b]	0.06266[b]
						(0.02818)	(0.02788)

TABLE 4. REGRESSION RESULTS: YOUNG WOMEN
(continued)

Explanatory Variables	Participation (ILF)		Entry (NL)			Exit (LN)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Labor Market Characteristics (1970)							
UE	-0.01994[a]	-0.01061	0.00149	-0.00041	-0.00051	0.00050	-0.00063
	(0.00554)	(0.00669)	(0.00812)	(0.00808)	(0.00635)	(0.000634)	(0.00634)
SOUTH	-0.01840	-0.01540	0.02019	0.02998	-0.00277	-0.01379	-0.01395
	(0.02199)	(0.02200)	(0.03462)	(0.03459)	(0.02384)	(0.02401)	(0.02363)
SIZE	-0.00030	-0.00035	-0.00108	-0.00110	0.00031	0.00046	0.00075
	(0.00090)	(0.00090)	(0.00146)	(0.00146)	(0.00094)	(0.00094)	(0.00094)
Changes (1970-71)							
CHDEP				-0.01345			0.09690[a]
				(0.02708)			(0.01791)
CHMSP				0.04273			0.14225[a]
				(0.05953)			(0.03205)
CHWDS				0.39492[a]			-0.08668
				(0.09321)			(0.06392)
CHIH				0.14553			0.09977
				(0.11880)			(0.10148)
CHDH				0.01511			0.05814
				(0.07181)			(0.05317)
Interaction							
UERACE		-0.02866[b]					
		(0.01155)					

TABLE 4. REGRESSION RESULTS: YOUNG WOMEN
(continued)

Explanatory Variables	Participation (ILF)		Entry (NL)		Exit (LN)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant Term	0.00595	-0.03855	0.16746	0.17693	0.66660	0.66235	0.57968
Adjusted R^2	0.085	0.087	0.044	0.060	0.027	0.037	0.068
F-Statistic	24.390	22.778	5.485	5.103	5.321	5.576	7.225
Observations	2506	2506	971	971	1531	1531	1531

[a]Significant at the 1 percent level on a two-tailed test.

[b]Significant at the 5 percent level on a two-tailed test.

[c]Significant at the 10 percent level on a two-tailed test.

points in the participation probability of white young women and 3.92 percentage points in the participation probability of black young women. Among males, the effects are smaller. An increase of one percentage point in the unemployment rate would reduce the participation probability by .45 percentage points for whites and .76 percentage points for blacks.

No evidence of a significant net effect of the unemployment rate on entry or exit probabilities is obtained. (These findings were not altered by the inclusion of a racial interaction term.) Unfortunately, since the regression coefficient measures the net effect of the unemployment rate, it is not possible to infer anything regarding the magnitudes of the additional and discouraged worker effects taken separately. However, it seems reasonable to suppose that these findings support our expectation of a larger impact of the unemployment rate on the long-term labor supply adjustments estimated in the participation regressions than on the shorter-term adjustments estimated in the entry and exit regressions.

The regression results shed light on a number of other factors influencing young people's labor supply decisions. At the mean unemployment rate, blacks have a higher probability of participating in the labor force than their white counterparts. However, while black females are more likely to enter the labor force than their white counterparts, black males have a higher probability of exiting than whites. This suggests that the racial differential in participation probabilities among males would be narrowed or even reversed as the cohort ages, while the participation gap among females would be widened. (This accords with cross-sectional data on labor force participation by race.)[13]

The regression results bear out our expectation that, given the current division of labor by sex in many families, demographic factors affect male and female participation differently. Marriage is strongly positively correlated with male participation. Additional dependents tend also to be positively related to participation. (The lack

13. Employment and Training Report of the President (Washington, D.C.: Government Printing Office, 1976), pp. 217-218.

of statistical significance of DEPS and CHDEP, as well as the occasional inconsistent signs of the former are probably due to their colinearity with marital status. Among females, marriage and additional dependents are strongly negatively related to participation. Marital dissolution over the period is a strong predictor of labor force entry (equation 4).

Such demographic variables appear to be an important factor in the large sex difference in exit rates for this age group that was noted earlier. Among females, other things equal, remaining or becoming married (spouse present) during the period is positively associated with the probability of exiting the labor force. Similarly the presence of dependents and increases in the number of dependents over the period contributed to an increase in the exit rate, all else equal. However, after controlling for the impact of such factors, variables correlated with market opportunities such as education, potential experience, union coverage and occupation are also important. This suggests that narrowing sex differences in market opportunities might reduce sex differences in labor supply behavior.

CONCLUSION

This paper used data from the National Longitudinal Surveys to examine the relationship between local area unemployment rates and the labor supply behavior of youth aged eighteen to twenty-four in 1970. The net effect of the unemployment rate on the probability of labor force participation in 1970 was found to be negative. Net discouragement appeared to be greater among young women than among young men, and to be larger among blacks than among whites. Since local labor market unemployment rates tend to be correlated over time, the coefficient on the unemployment rate variable in the participation regressions was held to approximate a long-term supply response to persistent intercity differences. The net impact of the unemployment rate on labor supply adjustments over a one-year period was also examined. No significant effect of the unemployment rate on the probability of labor force entry or exit between 1970 and 1971 was obtained.

The possibility that these findings are an artifact of the particular time period investigated cannot be dismissed.[14] In particular, it would be interesting to confirm these results for a period when the national unemployment rate was above 4.9%,[15] the average for 1970. However, we may tentatively conclude that these findings are consistent with the notion that there exist considerable transactions costs of moving into and out of the labor force and that the impact of the unemployment rate on the long-term determination of labor supply exceeds its impact on short-term adjustments over a one-year period. This in turn leads us to expect that the net effect of the ups and downs of the business cycle on the labor force participation of youth would not be very great. However, prolonged periods of high unemployment could produce net discouragement for this age group. At the level of the local labor market our results suggest the efficacy and importance of policies designed to stimulate aggregate demand in depressed labor markets.

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14. Stanley Stephenson, Jr. ("The Transition from School to Work of Young Men," unpublished working paper, December 1977) found no real impact of last year's labor market unemployment rate on young men's school enrollment and labor force participation probabilities for the years 1967 and 1969.

15. Employment and Training Report of the President, p. 211.

FAMILY STATUS AND LABOR FORCE PATTERNS

By: Martha S. Hill

ABSTRACT

Shifts in both parental and own living arrangements among youth and young adults are analysed in terms of their effects on the labor supply of these groups. A general theoretical model of household utility maximization based on the youth's evaluation of household member preferences is applied to a sample of noninstitutional individuals aged sixteen to twenty-four in 1975 who were classified as a child of the household head of a Panel Study of Income Dynamics (PSID) family in 1968 using Multiple Classification Analysis (MCA). The results indicate that there is a strong correlation between living arrangements and labor supply as measured by employment incidence and mean hours worked with young people living alone supplying significantly more labor than those still living in parental households. Males living away from parents but not alone have greater labor supply than their female counterparts. Black males are the only survey group whose labor supply is at all affected by parental living arrangements and they are affected negatively in terms of incidence and hours of work. However, a more reliable survey instrument on living arrangements and labor supply to better be able to discern the interrelationships and the direction of causality is clearly needed.

INTRODUCTION

In recent years there have been substantial shifts in the family status of American youth, both in terms of their own living arrangements and the living arrangements of their parents. Since household structure is fundamentally associated with life style, these shifts, no doubt, have implications for many facets of the lives of American youth. This paper will explore one such facet--labor supply. It will concentrate on the major types of changes in household structure affecting youth and the associated changes in their labor force behavior. It will also discuss implications of this analysis and the needs for further research.

Trends in Living Arrangements

Over the last decade and a half, the size of American households has been steadily declining. The average number of persons per household has decreased from 3.33 in 1960, to 3.14 in 1970, 2.94 in 1975,

and 2.86 in 1977.[1] The major factors contributing to this decline have been shifts toward one-person households and one-parent households combined with falling fertility rates. Given the subject matter of this paper, aspects of these factors which are most relevant to youth will be examined here.

Recent years have seen an increasing tendency toward independent living by young adults who are postponing marriage. The percent of young adults aged eighteen to twenty-four who were yet to marry has risen steadily since 1960.[2] And as the proportion of young adults remaining single has increased, so too has the tendency of these persons to establish their own households. This trend has contributed to the 40% increase from 1970 to 1976 in the proportion of all households consisting of one person.[3]

Another factor in the changing family status of young adults has been declining fertility. The number of children ever born per 1,000 women in the age ranges fifteen to nineteen and twenty to twenty-four in 1975 were half of what they were in 1960. These changes are not entirely the result of the trend toward remaining single. Among ever-married women in these age ranges, the percent who were childless rose substantially between 1960 and 1975, with the percent of ever-married women aged twenty to twenty-four who were childless increasing from 24.2 to 42.8.[4]

At the same time that these changes have been taking place, there has been a growing trend toward one-parent households. From 1960 to 1976, the proportion of children under age eighteen living with both parents fell from 87.5% to 80.0%, with most of this change due to a rise

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1. U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 313, September 1977.
2. U.S. Bureau of the Census, Current Population Reports, Series P-30, No. 292, March 1976, Table 7.
3. Paul C. Glick and Arthur J. Norton, Population Bulletin: Marrying, Divorcing, and Living Together in the U.S. Today (Washington, D.C.: Population Reference Bureau, Inc., 1977), p. 31.
4. U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 292, March 1976, Table 4.

in the proportion of children living with their mothers only.[5] Black children have been particularly affected by the growth of one-parent households, with the proportion of black children under age eighteen living with both parents falling from 71% in 1965[6] to 50% in 1976.[7]

Greater marital disruption has been the major contributor to the growth in one-parent households.[8] Divorce rates have increased substantially since 1960, and desertions have been on the rise in recent years. But rising illegitimacy rates have also been a primary contributor. In the past twenty-five years the illegitimacy rate has more than doubled, from 4 per 100 live births to 10 per 100 live births, with about 80% of illegitimate births now being attributable to women under age twenty-five.[9] These trends have resulted in greater proportions of young adults coming from "broken homes" and living unmarried with children of their own.

In sum, recent years have seen young adults shifting away from marriage with children toward more independent living, either alone or with children, and an increase in their probability of having lived with one parent only at sometime, with this probability likely to increase even more in the future.[10]

Related Literature

Studies of the effects of family status and living arrangements of youth on their labor force behavior are few and far between. Bowen and Finegan, in their epic 1969 volume on labor force participation,

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5. Glick and Norton, op. cit., p. 28.

6. Brofenbrenner, Urie, "The Changing American Family," The American Federalist, February 1977, p. 9.

7. Glick and Norton, op. cit., p. 28.

8. Brofenbrenner, op. cit., p. 8.

9. Brofenbrenner, op. cit., p. 8.

10. Brofenbrenner (p. 8) states that the trend toward one-parent households has been most rapid for children under six. And Glick and Norton (1977) predict that as many as 45% of all children born in 1977 will "live for a period of at least several months as members of a one-parent family" (p. 29).

touch on this subject.[11] They analyze the cross-sectional effects of the presence of both parents on labor supply of never-married children aged fourteen to seventeen and the cross-sectional effects of marriage on the labor force behavior of eighteen to twenty-four year-old males. They find a positive effect of own marriage on the labor force participation rates of eighteen to twenty-four year-old males. whether or not they were enrolled in school, and a generally negative effect of the presence of both parents on the labor force participation of the fourteen to seventeen year-olds.[12] These effects emerged even with controls for economic circumstances and other demographic characteristics. Thus, their work suggests that family status and living arrangements of youth do exert independent effects on their labor force behavior.

There are, however, many problems with this analysis. To begin with, the effects of coming from a broken home are examined only for very young adults (aged fourteen to seventeen) living in the parental home. These effects may not be generalizable to all young adults.

Effects of own living arrangements receive only cursory treatment through the analysis of the effects of marital status. And a major subgroup of young adults is not included in this analysis--eighteen to twenty-four year-old females. Additionally, labor force behavior is primarily measured in terms of labor force participation rates; hours worked are not analyzed in detail. One of their findings suggests that this could, indeed, be a major omission. When they do look at both hours worked and labor force participation rates, they find that among males aged eighteen to twenty-four enrolled in school, those who are married registered higher labor force participation rates but fewer hours worked than did those who were single and living at home.

Consequently, this analysis leaves many questions concerning ef-

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11. William G. Bowen and Aldrich T. Finegan, The Economics of Labor Force Participation (Princeton: Princeton University Press, 1969).

12. Effects of presence of both parents varied by sex and school enrollment. Of the fourteen to seventeen year-olds in school, the effect was more strongly negative for females than males. Of the fourteen to seventeen year-olds not in school, the effect was quite large and negative for males but nonexistent for females.

fects of family status and living arrangements on labor force behavior unanswered. To boot, it is a cross-sectional analysis, looking at differences across individuals. If characteristics associated with the likelihood of an individual falling into a particular category of family status are not adequately controlled, then the findings of such analysis can be misleading.

Duncan, Featherman, and Duncan (1972) touch on effects of parental family stability with respect to something closely related to labor force behavior--socioeconomic status of the current occupation.[13] Their work suggests that coming from a parental family with both parents present versus from a female-headed parental family has a small positive effect on the occupational status of twenty-five to sixty-four year-old males, independent of other socioeconomic background factors. Although the age-group analyzed has already passed the young adult stage, this effect could, at least in part, be the result of differential labor force behavior during youth.

Work with the Parnes' panels of young men and women suggests that changes in marital status affect the labor supply decisions of young males and females in different ways. Kohen and Parnes (1971) find that over a two-year period there was no substantial effect of a change in marital status on labor force participation rates of young men.[14] Roderick and Kohen (1973) find substantial effects of changes in marital status over a two-year period on the labor force participation of young women; over the observation period young women who married were much more likely than those who did not marry to decrease their labor force participation, and white women who divorced were more likely than

13. O.D. Duncan, D.L. Featherman, and B. Duncan. Socioeconomic Background and Achievements (New York: Seminar Press, 1972).

14. Andrew I. Kohen and Herbert S. Parnes. Career Thresholds: A Longitudinal Study of the Educational and Labor Market Experience of Male Youth, Vol. 3 (Columbus, Ohio: Center for Human Resource Research, The Ohio State University, 1971), pp. 38-41.

others to increase their participation.[15] These analyses, however, concentrated only on marital status rather than the wider range of possible living arrangements, and they omit many potentially relevant controls, such as number of own children and socioeconomic background.

The above literature on family status and labor force patterns of youth treats the relationship as one-way, with changes in family status affecting labor supply but not the reverse. With some types of changes in family status, such as parental divorce, this seems a plausible approach. However, it is not entirely satisfactory for many other types of changes in family status. Changes in the young adult's own living arrangements are probably interrelated with labor supply in a more complex fashion, affecting the labor supply decision but also being affected by it. A sufficiently high amount of earnings may be required for some to afford living alone or with a spouse. This argues for analyzing the relationship between own living arrangement and labor supply in a simultaneous framework. Given the constraints of present data sources this currently can be accomplished only with the use of statistical techniques such as two-stage least squares.

This method was used by Hill (1977) in studying the interrelation between youth's decisions to split off from their parents, marry, attend school, and work full time.[16] In this study Hill found strong positive correlations between working full time and both splitting-off and marriage for males and weak correlations between working full time and these other actions for females. The two-stage least squares analysis of the interrelations, however, proved unsatisfactory. This work failed to yield clear implications, in part because of the problems associated with the use of this technique with behavioral models for using microdata. Two-stage least squares, in effect, employs instrumental variables to alleviate the problem of correlation between regressors and the error term. As pointed out by Wonnacott and Wonna-

15. Rodger D. Roderick and Andrew I. Kohen. Years for Decision: A Longitudinal Study of the Educational and Labor Market Experience of Young Women, (Columbus, Ohio: Center for Human Resource Research, The Ohio State University, 1973), pp. 24-27.

16. Martha S. Hill, "The Decision by Young Adults to Split-off from Their Parents' Households," PhD dissertation, University of Michigan 1977.

cott (1970), an effective instrumental variable must be both highly correlated with the regressor causing the problem and not directly an explanation of the dependent variable (and thus not correlated with its error term).[17] The task of finding such instrumental variables in behavioral models using microdata is awesome. It is difficult to find a measured variable which satisfies one of the two requirements, much less both. At the individual level, variables which affect one decision in an interrelated decision matrix may plausibly affect the other decisions as well. Also, microdata do not yield the high correlations between variables which are characteristic of aggregate data.

This argues for collecting data which specifically ask individuals about the interrelation between such decisions as labor supply and own living arrangement. Such data are not currently available. Thus, although recognizing the inadequacies of a one-way analysis of the relationship, this paper will be confined to that approach.

THEORETICAL FRAMEWORK

Currently, there is no well-developed theory on the labor supply responses of young adults to changes in family status. However, recent developments in the theory of the labor supply decisions of married women address some effects of changing household structure on labor supply. Therefore, this section will attempt to draw upon aspects of these developments which are applicable to youth.

Recent models of the labor supply decisions of married women, such as those of Becker,[18] Willis,[19] Gronau,[20] and Gramm[21] are based on the notion that a wife's labor supply is determined in conjunction with other household-related decisions in the process of maximizing household

17. R. Wonnacott and T. Wonnacott, Econometrics (New York: J. Wiley, 1970), pp. 150-60.

18. Gary S. Becker, "A Theory of the Allocation of Time," Economic Journal (September 1965), pp. 493-517.

19. Robert J. Willis, "A New Approach to the Economic Theory of Fertility Behavior," Journal of Political Economy, (March/April 1973), pp. S14-S64.

20. Reuben Gronau, "The Effect of Children on the Housewife's Value of Time," Journal of Political Economy (March/April 1973, pp. S168-S199.

21. Wendy Lee Gramm, "Household Utility Maximization and the Working Wife," American Economic Review (March 1975), pp. 90-100.

utility. Household utility is a function of commodities produced by the household by combining goods purchased in the market with the home time inputs of the household members. The nature of the utility function is determined by the preferences of all household members as evaluated by the husband and wife, who make the household decisions. The nature of the household production function is determined by the state of the household's technology, just as a firm's production function is determined by the state of available production technology. In maximizing the household utility function, household members are constrained by household income and their time, which can be allocated between market uses and home uses. In applying this model to married women, economists have standardly treated the income of household members other than the wife as exogenously determined and assumed that the home time of members other than the wife is unproductive. From these assumptions, economists have been able to draw implications concerning the reservation wage of a married woman and consequently her labor supply. The reservation wage is defined as the minimum wage a person must be able to obtain in the market which makes it worthwhile to take a job. Mathematically this can be expressed as the ratio of the marginal utility product of home time to the marginal utility product of income in terms of market goods, evaluated at zero hours of market work. When the wife's reservation wage is less than or equal to her market wage, then household utility is maximized by her working in the labor market. *Ceteris paribus*, factors which increase the marginal utility product of her home time decrease her likelihood of working in the labor market, whereas factors which increase the marginal utility product of market goods increase the likelihood of her working in the labor market.

Some insight into the labor supply decisions of young adults may be gained by adapting this general framework. In this model, the young adult will be assumed to maximize a utility function as he or she perceives it. Unlike the model for married women, this utility function is assumed to be based on the individual's evaluation of the preferences of the household members rather than on the parents' evaluation. Since parents and their children who are in transition to adulthood are likely to have different sets of preferences, the young adult's evaluation of

parents' preferences would no doubt differ from their actual preferences. Thus, the utility function being maximized by a young adult in his/her parents' household is not necessarily identical to the parents' household utility function.

The young adult's utility function is assumed to depend on the household production of commodities, Z, which in turn are a function of time and market inputs of the household members. Both the young adult's age, a, and living arrangement, LA, will be assumed to affect the household production technology. The living arrangement will also be assumed to affect the amount of time and goods inputs of the other household members, which the young adult takes as given but are subject to exogenous change. In maximizing his or her utility function, the young adult is constrained by both own income and time, with time to be allocated between market and home uses.

This problem can be stated as:

(1) Maximize $U(Z)$

subject to: $Z = g(X_i, H_i, Xo, Ho, a, LA)$

$$\omega_i(T_i - H_i) + M - p_i X_i = 0$$

$$T_i - H_i \geq 0$$

where X_i is market goods purchased by the young adult,

H_i is home time input of the young adult,

Xo is market goods purchased by other household members,

Ho is home time input of the other household members,

ω_i is the young adult's market wage,

T_i is total time of the young adult,

M is nonlabor income of the young adult,

P_i is the vector of prices.

The living arrangement of a young adult can undergo many changes. Here we will concentrate on five major types of changes: (1) the movement out of the parental household to a one-person household; (2) the movement, instead, to a married household; (3) the movement to a married household with children; (4) the movement to an unmarried household with children, and (5) the loss of one of two parents. Each of these changes involves the loss and in some cases the gain of household members, so

each affects the amount of X_o and H_o in the household and the household's production technology.

In the case of movement out of the parental household to a one-person household, the young adult tends to undergo a loss of both the market goods and time of the other members of the parental household, predominantly of the parents. And, no doubt, the household's technology changes. Movement out of a family to live alone places greater reliance of the young adult on his or her market work to provide market goods and greater reliance on own home time to produce household characteristics. However, since certain market goods, such as food, clothing, and shelter, are necessary for survival, it seems likely that the young adult would reach a new equilibrium in the one-person household that entailed, at zero hours of market work, a higher marginal utility product of market goods relative to the marginal utility product of home time than in the parental household. If so, this would mean a lower reservation wage and consequently a greater likelihood of working.

In the case of movement out of the parental household to live with a spouse, the situation is further complicated by the addition of another adult. If the spouse decides to specialize relatively more in market production than in home production, most typically the case with husbands, then it seems likely that the young adult would reach a new equilibrium that entailed, at zero hours of market work, a lower marginal utility product of market goods relative to the marginal utility of home time than in the case of the one-person household. If the spouse decides to specialize relatively more in home production than in market production, the stereotypical case with wives, then it seems likely that the young adult would reach a new equilibrium that entailed, at zero hours of market work, a higher marginal utility product of market goods relative to the marginal utility of home time than in the case of the one-person household. If this is so, then young males who marry would tend to have lower reservation wages than young males who form one-person households and, consequently, would be even more likely to work. Young females who marry would tend to have higher reservation wages than young females who form one-person households, and consequently would be less likely to work.

It is not unlikely that having children would tend to accentuate the degree of market/home specialization of both spouses. If so, young males living with a spouse and children would tend to work more than their childless counterparts, whereas young women living with a spouse and children would tend to work less than their childless counterparts.

In the case of young adults living with children and no spouse, there is no other adult present to contribute market goods and home time to household production. There is a greater need for market goods than in one-person households, which would tend to increase labor supply, but care for the young children tends to be quite time-intensive, thus tending to decrease labor supply. If there are available sources of non-labor income with which to purchase a minimal amount of market goods, as with ADC for example, then it is likely that the labor supply of young adults with this living arrangement would fall somewhere in between that of one-person households and households containing a spouse as well as children.

A loss of a parent from the young adult's household of origin is particularly difficult to ascertain from this framework. The loss of a parent can mean the loss of income, and/or the loss of market goods and home time of that household members, depending on the given living arrangement of the young adult. Additionally, these losses can spur subsequent changes in the market/home time allocation of the remaining parent as well as changes in household technology. Such a complex of contingencies precludes clear implications for the young adult's labor supply at this time. However, the framework suggests that all changes in living arrangements partially affect the labor supply decision of youth by altering household money income relative needs, but that additional effects result from subsequent changes in home time inputs available to the household and changes in household production technology.

THE EMPIRICAL ANALYSIS

The empirical analysis will concentrate on differences in family status across individuals at a point in time, 1975, using Multiple Classification Analysis (MCA), a form of dummy variable regression.[22] Changes over time for the same individuals will also be investigated.

The data used for this work come from the Panel Study of Income Dynamics (PSID), a longitudinal study of a national sample of over 5,000 American families.[23] The PSID is well-suited to an analysis of effects of changes in family status on the labor supply of youth since it follows all members of households interviewed at the start of the study, 1968, even if they leave the households. Thus, both changes in the parental household and the formation of new households have been recorded, as has the number of hours worked by each household member.[24]

The sample used for the analysis consists of noninstitutional individuals aged sixteen to twenty-four in 1975 who were classified as a child of the household head of a PSID family in 1968, when the study began.[25] The sample is restricted to individuals who were initially children in order to ascertain parental family status and socio-economic background.[26] Young males and young females are analyzed separately since both the literature and preliminary investigation of the data indicated differential labor force behavior by sex. Small cell sizes in a variable of primary interest, own living arrangement, prevent further subdivisions of the sample.

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22. The longitudinal analyses that will be referred to in the text used this same technique to observe the effects of changes in family status on changes in labor supply--1975 relative to 1968.

23. The PSID oversamples poor families but weights the data to correct for this oversampling and for differential nonresponse in order to arrive at a nationally representative sample.

24. It should be noted, however, that the PSID data are based on information provided by the household head, so information concerning other household members is not gathered directly from those individuals.

25. Individuals in institutions are excluded from the analysis since their hours worked are not ascertained in the PSID.

26. The longitudinal analysis that will be referred to in the text further restricts the sample to individuals not in institutions in 1968 for whom hours worked was ascertained.

For the purposes of this paper family status is identified on the basis of two variables--own living arrangement and parents' living arrangement. The variable representing own living arrangement consists of six categories: living with spouse and children, living with spouse and no children, living with children and no spouse, living alone, living with other adults, and in parental household.[27] A young adult falls into one of the first five categories only if he or she is a household head or wife as of 1975.

With respect to parental family status, this paper will be primarily concerned with whether or not the youth is from a broken home, i.e., whether or not he or she comes from a stable two-parent family. This distinction will be based on the presence of the youth's parents in the parental household between the beginning of the PSID, 1968, and the time the youth became a household head or wife or 1975, whichever came first. Since black youth are more likely than white youth to come from broken homes, there may be race differential effects of parental status. In order to investigate this possibility, parental family status will be combined with race to form a pattern variable. The parental family status/race variable will consist of four categories: same two parents present until left home/white; other/white; same two parents present until left home/non-white; other/non-white.[28]

Labor supply will be identified both on the basis of employment incidence (whether working) and volume of hours worked. An individual will be classified as working if 1974 annual hours of work equal or exceed 250 hours, and the volume of hours worked will be measured as the number of hours worked in 1974.[29]

Analysis of a dichotomous dependent variable, such as whether work-

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27. The individual is classified as living with a spouse if the PSID indicates that the young adult is a head or wife and a wife is present in his or her household, as indicated by age of wife being non-zero. This does not in all cases mean that the young adult is legally married.

28. Here, "left home" means becoming a household head or wife or 1975, whichever came first.

29. In the PSID, annual hours worked ascertained in a given year apply to the preceding calendar year, e.g., work hours ascertained in 1975 are annual hours worked in 1974.

ing, is optimally done using some maximum likelihood procedure such as logit analysis. But with proportions not too close to 1 or 0, substantial sample sizes, and categorical predictors which can handle nonlinearities more flexibly than any arbitrary transformation of the dependent variable, the remaining problems of using MCA instead are minor.[30]

Control variables included in the analysis will consist of demographic, economic, and socio-economic background factors: age, education, other family income/family needs, and the county unemployment rate all as ascertained in 1975; and family income/needs, parental head's education, if parental head is a white collar worker, and if mother is working all as ascertained in 1968.[31]

As shown in Table 1, less than half of the sample of youth had formed their own households by 1975.[32] Household formation was more common among females than males, with about 45% of the females being a household head or wife in 1975 as opposed to about 35% of the males. Most of the youth who had left the parental household were living with a spouse. However, a substantial percentage, particularly of males, had formed one-person households, and a not trivial percentage of females had formed one-parent households. Those living with a spouse were almost as likely to be childless as to have children present in the household.

With respect to parents' living arrangement, although about 85% of the sample began the panel period in a two-parent household, by 1975 only [illegible] could be classified as coming from a stable two-parent family. As Table 2 indicates, sex differences in parents' living arrangement were very minor. However, race differences were substantial. Nonwhites were much less likely than whites to come from stable two-parent families; only about 50% of the nonwhites were from homes where the same

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30. The remaining problems are the possible prediction of probabilities outside the 0 to 1 range and the existence of heterogeneous variance.

31. Additional controls in the longitudinal analysis are change in the county unemployment rate and change in other family income/needs, both measured as the difference between the measure ascertained in 1975 and that ascertained in 1968. Like hours worked, these measures ascertained in a given year apply to the preceding calendar year.

32. See Appendix Table A.2 for sample distributions with respect to change in parents' living arrangement.

TABLE 1

OWN LIVING ARRANGEMENT IN 1975 BY SEX

(Noninstitutional Individuals Aged 16-24 in 1975 Who Were in Their Parents' Households in 1968)

Own Living Arrangement in 1975	Males		Females	
	Number of Observations	Weighted Percent	Number of Observations	Weighted Percent
With Spouse and Children	146	12.9	220	19.0
With Spouse and no Children	102	9.9	142	13.5
With Children and no Spouse	4	0.3	124	4.9
Living Alone	175	13.0	108	9.2
With Other Adults	15	1.2	8	0.6
In Parental Household	908	62.6	879	52.7
TOTAL	1,350	100.0	1,481	100.0

TABLE 2

PARENTS' LIVING ARRANGEMENT, BY RACE AND SEX

(Noninstitutional Individuals Aged 16-24 in 1975 Who Were in Their Parents' Households in 1968)

Parents' Living Arrangement/Race	Males		Females	
	Number of Observations	Weighted Percent	Number of Observations	Weighted Percent
Same Two Parents Present Until Left Home/White	529	66.5	522	62.0
Other/White	145	17.8	162	19.0
Same Two Parents Present Until Left Home/Non-white	307	7.7	367	9.9
Other/Non-white	369	8.0	430	9.1
TOTAL	1,350	100.0	1,481	100.0

two parents were present during the observation period.

Of the individuals not from stable two-parent families, there were substantial differences by race as to the type of parental living arrangement. Of the whites, about 50% lost one parent during the observation period and 30% were from stable one-parent families. Of the nonwhites, about 30% lost one parent during the observation period and 60% were from stable one-parent families.[33]

Labor Supply and Own Living Arrangement

The MCA results indicate that there is a strong relationship between the living arrangements of young adults and their labor supply. Living arrangements are significant and sizably correlated with both employment incidence and mean hours worked, even with controls for basic demographic, economic, and socio-economic background factors.[34] The nature of these relations varies by sex as shown in Tables 3 and 4.

Males who have left the parental household to establish either a married household or a one-person household have much higher incidence of employment and mean hours worked than do those who are still in the parental household. Labor supply differences among young males who have formed their own households are relatively small: There is virtually

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33. See Appendix Table A-2 for details concerning sample distributions with respect to change in parents' living arrangement.

34. There are two potentially important measurement problems which could be associated with this finding. The first is that the respondent's relation to the youth varies with the youth's living arrangement (the respondent is the household head), and reports of youth's work hours may be lower if his/her parent is the respondent than if he/she is the actual respondent. Since mean work hours in 1974 correspond closely to change in work hours regardless of change in living arrangement, this probably is not a major problem. The other potential problem is the timing of the measurement of work hours and living arrangement. Living arrangement is measured at a point in time whereas work hours are measured over the time span of a year. The present analysis uses living arrangement in the spring of 1975 and 1974 annual work hours. Living arrangement in spring 1974 could have been used instead, but that measure would not have been satisfactory either. Identical MCA's to those presented in the paper were run with living arrangement in 1974 substituted for the 1975 measure to identify the extent of this problem. The results indicated weaker but still highly significant differences in labor supply with respect to own living arrangement, and the pattern of the relationships were similar but less pronounced.

TABLE 3

UNADJUSTED AND ADJUSTED PROPORTIONS OF YOUNG ADULTS WORKING IN 1974, BY OWN LIVING ARRANGEMENT IN 1975 AND SEX

(Noninstitutional Individuals Aged 16-24 in 1975 Who Were in Their Parents' Households in 1968)

	Males		Females	
Own Living Arrangement in 1975	Unadjusted Proportion	Adjusted Proportion+	Unadjusted Proportion	Adjusted Proportion+
With Spouse and Children	.975	.861	.451	.395
With Spouse and no Children	.989	.877	.807	.692
With Children and no Spouse	1.000[a]	.702[a]	.649	.671
Living Alone	.919	.841	.949	.844
With Other Adults	.716[a]	.642[a]	1.000[a]	1.015[a]
In Parental Household	.542	.603	.446	.512
Overall Mean		.695		.556
Standard Deviation		.461		.497
Eta^2		.190**		.133**
$Beta^2$		.071**		.073**

+Adjusted for the effects of: age in 1975, education in 1975, other family income/family needs in 1974, 1974 county unemployment rate, family income/family needs in 1967, 1968 parental head's education, whether 1968 parental head was white collar worker, whether mother was working in 1968, and parents' living arrangement/race.

[a]Figure based on fewer than 20 observations.

**Significant at .01 level.

TABLE 4

UNADJUSTED AND ADJUSTED+ MEAN HOURS WORKED IN 1974, BY OWN LIVING ARRANGEMENT IN 1975 AND SEX

(Noninstitutional Individuals Aged 16-24 in 1975 Who Were in Their Parents' Households in 1968)

Own Living Arrangement in 1975	Males		Females	
	Unadjusted Mean	Adjusted Mean+	Unadjusted Mean	Adjusted Mean+
With Spouse and Children	1,950	1,598	577	380
With Spouse and no Children	1,846	1,600	1,149	960
With Children and no Spouse	2,373[a]	1,852[a]	802	724
Living Alone	1,536	1,310	1,491	1,287
With Other Adults	1,452[a]	1,291[a]	1,312[a]	1,263[a]
In Parental Household	584	748	452	614
Overall Mean	1,026		688	
Standard Deviation	903		760	
Eta^2	.419**		.213**	
$Beta^2$	.168**		.115**	

+Adjusted for the effects of: age in 1975, education in 1975, other family income/family needs in 1974, 1974 county unemployment rate, family income/family needs in 1967, 1968 parental head's education, whether 1968 parental head was white collar worker, whether mother was working in 1968, and parents' living arrangement/race.

[a]Figure based on fewer than 20 observations.

**Significant at .01 level.

no difference in this respect between married males with children and married males without children. However, young males in one-person households tend to work fewer hours than do young males in married households. Control variables for other demographic factors, socio-economic background, other family income/family needs, and the unemployment rate reduce the strength but do not alter the pattern of these relationships between labor supply and own living arrangement. Of these variables, age is the primary adjustment factor.[35]

Among young women, the relationships between own living arrangement and labor supply are more complex. As with males, both the employment incidence and mean hours worked are lower for individuals still in their parental household than the average for those who have formed their own households. However, female labor supply varies widely with the type of household formed, and the control factors play a more important role for females than for males. Both with and without controls, though, one result is clear--of the young females, those who form one-person households are most likely to be working and work the most hours annually. Interestingly, the labor supply of females who form one-person households is quite similar to that of males who form one-person households. Females with other living arrangements tend to work less than males with the same living arrangement, particularly if they are married.

With respect to these other living arrangements, simple unadjusted means indicate that: (1) females living with a spouse and children work as much as females still in the parental household, and (2) females living with a spouse and no children work more than females living with children and no spouse. However, females living with a spouse and children tend to be older than those still in the parental home, and age has a strong positive but declining effect on labor supply. Thus, when the females are statistically placed in otherwise similar circumstances, particularly with respect to age, these relative effects of living arrange-

35. MCA's were run without age as a control variable, and the results indicated relatively minor adjustments on the part of the remaining control variables.

ments change.[36] Females living with a spouse and children are less likely to work and work fewer hours than their counterparts still in the parental household. So, with controls for other factors, primarily age, we find that young females living with a spouse and children have the lowest labor market supply.

The control variables also play a role in labor supply differences of young females living with a spouse but without children vs. those living with children and no spouse. Much of this alteration is, undoubtedly, due to the intervening effects of race. Being nonwhite as opposed to white tends to have a negative effect on labor supply (which is somewhat stronger for employment incidence than for hours worked). A proportionately larger percentage of females living with children and no spouse are nonwhite (40% opposed to 7% of those living with a spouse with no children). Thus, when females in these two groups are statistically placed in otherwise similar circumstances, we find that females living with children and no spouse are almost as likely to be working as females living with a spouse and no children, although they work fewer hours.

The relationships between change in own living arrangement and change in labor supply were also investigated using MCA analysis. Since these results were so similar to those just discussed, the tables presenting the longitudinal relationships are relegated to the appendix.[37]

Labor Supply and Parents' Living Arrangement

As indicated by Tables 5 and 6, effects of parents' living arrangement on the labor supply of most youth are relatively small. The labor supply of white males and of females is essentially unaffected by whether or not the individual is from a stable two-parent family, both in

36. MCA's were run without age as a control variable, and the results indicated only minor adjustments of the remaining control variables on the labor supply of these groups of females.

37. Changes were measured as the difference between initial, as ascertained in 1968, conditions and end, as ascertained in 1975, conditions. Since the entire sample started out in the parental household and over 90% of the youth were initially nonworkers, it is not surprising that the cross-sectional differences in both own living arrangement and labor supply closely match the longitudinal changes in these conditions.

TABLE 5

UNADJUSTED AND ADJUSTED+ PROPORTIONS OF YOUNG ADULTS WORKING IN 1974, BY PARENTS' LIVING ARRANGEMENT, RACE, AND SEX

(Noninstitutional Individuals Aged 16-24 in 1975 Who Were in Their Parents' Households in 1968)

	Males		Females	
Parents' Living Arrangement/Race	Unadjusted Proportion	Adjusted Proportion+	Unadjusted Proportion	Adjusted Proportion+
Same Two Parents Present from 1968 Until Left Home/White	.724	.712	.590	.593
Other/White	.719	.725	.607	.593
Same Two Parents Present from 1968 Until Left Home/Nonwhite	.615	.646	.398	.392
Other/Nonwhite	.476	.535	.381	.403
Overall Mean	.695		.556	
Standard Deviation	.461		.497	
Eta^2	.024**		.026**	
$Beta^2$	.012**		.024**	
F-value for Pattern Variable as opposed to additive model	4.61*		0.12	

+Adjusted for the effects of: age in 1975, education in 1975, other family income/family needs in 1974, 1974 county unemployment rate, family income/family needs in 1967, 1968 parental head's education, whether 1968 parental head was white collar worker, whether mother was working in 1968, and own living arrangement in 1975.

*Significant at .05 level.

**Significant at .01 level.

terms of employment incidence and annual hours worked. The labor supply of black males, however, is affected by parental living arrangement. Black males not from stable two-parent families are less likely to work and working somewhat fewer hours than those from stable two-parent families. This finding is not without importance since half of the young black males do not come from stable two-parent families. Interestingly, these effects of parental living arrangements are essentially unaffected by the control variables; the adjusted means are virtually equivalent to the unadjusted means.

Changes in Parental Living Arrangements and Labor Supply

Tables 7, 8, and 9 address the issue of whether the loss of a parent changes the labor force behavior of young adults. Consequently, the variable measuring change in parental living arrangement is defined in such a manner as to distinguish young adults from stable two-parent homes, those from stable one-parent homes, and those from where one of the two parents recently left. The remaining category on the variable is a catch-all category, for which the small sample size did not allow further distinction.

The results indicate that the loss of one parent over the panel period and prior to leaving home does not alter substantially the labor supply of young adults.[38] White youth, both males and females, were somewhat more likely to enter the work force if they lost a parent, whereas nonwhite females were somewhat less likely to enter the work force under the same circumstances. However, in terms of change in hours worked differences between youth from stable two-parent homes and those who lost one parent during the observation period were relatively small particularly when one controlled for other factors.

Other effects of change in parental living arrangements were relatively more important. Membership in the catch-all "other" category of change in parental status constrained the increase in labor supply of youth, particularly nonwhite youth. These results, however, are not subject to clear interpretation since small cell size precluded

38. Individuals are classified as losing a parent if two parents were present in 1968, but only one parent was later present while the youth was still a part of the household.

TABLE 6

UNADJUSTED AND ADJUSTED+ MEAN HOURS WORKED IN 1974, BY PARENTS' LIVING ARRANGEMENT, RACE, AND SEX

(Noninstitutional Individuals Aged 16-24 in 1975 Who Were in Their Parents' Households in 1968)

Parents' Living Arrangement/Race	Males		Females	
	Unadjusted Mean	Adjusted Mean+	Unadjusted Mean	Adjusted Mean+
Same Two Parents Present from 1968 Until Left Home/White	1,068	1,067	728	725
Other/White	1,090	1,048	754	714
Same Two Parents Present from 1968 Until Left Home/Nonwhite	850	897	493	528
Other/Nonwhite	705	754	492	556
Overall Mean	1,026		688	
Standard Deviatiaon	903		760	
Eta^2	.015**		.016**	
$Beta^2$	.010**		.009*	
F-value for Pattern Variable as opposed to additive model	1.08		0.40	

+Adjusted for the effects of: age in 1975, education in 1975, other family income/family needs in 1974, 1974 county unemployment rate, family income/family needs in 1967, 1968 parental head's education, whether 1968 parental head was white collar worker, whether mother was working in 1968, and own living arrangement in 1975.

*Significant at .05 level.

**Significant at .01 level.

TABLE 7

UNADJUSTED AND ADJUSTED PROPORTIONS OF YOUNG MALES CHANGING WORK STATUS, BY CHANGE IN PARENTS' LIVING ARRANGEMENT AND RACE

(Noninstitutional Males Aged 16-24 in 1975 Who Were in Their Parents' Households in 1968 and For Whom Hours Worked in 1967 Was Ascertained)

Change in Parents' Living Arrangement/Race	Entered Work Force		Left Work Force		Remained in Work Force		Remained out of Work Force	
	Unadj. Prop.	Adj. Prop.+	Unadj. Prop.	Adj. Prop.+	Unadj. Prop.	Adj. Prop.+	Unadj. Prop.	Adj. Prop.+
Same Two Parents 1968 Until Left/White	.604	.601	.003	.004	.091	.089	.301	.308
Same One Parent 1968 Until Left/White	.724	.708	.000	-.004	.090	.043	.185	.252
Lost One Parent Between 1968 and Left/White	.630	.666	.000	-.002	.035	.032	.335	.305
Other/White	.530	.524	.000	.003	.180	.166	.289	.302
Same Two Parents 1968 Until Left/Nonwhite	.537	.525	.005	.005	.076	.097	.382	.372
Same One Parent 1968 Until Left/Nonwhite	.407	.428	.000	.001	.059	.090	.533	.482
Lost One Parent Between 1968 and Left/Nonwhite	.590	.526	.000	.001	.027	.116	.383	.356
Other/Nonwhite	.243	.339	.000	.004	.000	.009	.757	.650
Overall Mean	.590		.003		.084		.324	
Standard Deviation	.492		.050		.277		.468	
Eta^2 /	.020**		.001		.010		.029*	
Beta^2	.017		.002		.009		.015	
F-value for Pattern Variable as opposed to additive model	1.99		0.02		3.20*		3.04*	

+Adjusted for the effects of: age in 1975, education in 1975, other family income/family needs in 1974, 1974 county unemployment rate, family income/family needs in 1967, 1968 parental head's education, whether 1968 parental head was white collar worker, whether mother was working in 1968, other family income/family needs 1974-1967, county unemployment rate 1974-1967, and change in own living arrangement.

*Significant at .05 level.

**Significant at .01 level.

TABLE 8

UNADJUSTED AND ADJUSTED+ PROPORTIONS OF YOUNG FEMALES CHANGING WORK STATUS, BY CHANGE IN PARENTS' LIVING ARRANGEMENT AND RACE

(Noninstitutional Females Aged 16-24 in 1975 Who Were in Their Parents' Households in 1968 and For Whom Hours Worked in 1967 Was Ascertained)

Change in Parents' Living Arrangement/Race	Entered Work Force		Left Work Force		Remained in Work Force		Remained out of Work Force	
	Unadj. Prop.	Adj. Prop.+	Unadj. Prop.	Adj. Prop.+	Unadj. Prop.	Adj. Prop.+	Unadj. Prop.	Adj. Prop.+
Same Two Parents 1968 Until Left/White	.565	.570	.018	.017	.025	.025	.391	.388
Same One Parent 1968 Until Left/White	.676	.593	.000	.003	.019	.015	.305	.388
Lost One Parent Between 1968 and Left/White	.552	.613	.023	.021	.015	.009	.410	.356
Other/White	.562	.506	.000	-.002	.045	.078	.393	.418
Same Two Parents 1968 Until Left/Nonwhite	.389	.380	.020	.024	.012	.002	.580	.594
Same One Parent 1968 Until Left/Nonwhite	.396	.402	.000	.001	.035	.044	.569	.553
Lost One Parent Between 1968 and Left/Nonwhite	.304	.327	.000	.012	.000	.001	.696	.660
Other/Nonwhite	.262	.193	.000	.015	.000	.032	.738	.761
Overall Mean	.535		.015		.023		.427	
Standard Deviation	.499		.122		.150		.495	
Eta^2	.029**		.003		.003		.033**	
$Beta^2$	.028**		.003		.009		.030**	
F-value for Pattern Variable as opposed to additive model	0.61		1.47		0.62		0.20	

+Adjusted for the effects of: age in 1975, education in 1975, other family income/family needs in 1974, 1974 county unemployment rate, family income/family needs in 1967, 1968 parental head's education, whether 1968 parental head was white collar worker, whether mother was working in 1968, other family income/family needs 1974-1967, county unemployment rate 1974-1967, and change in own living arrangement.

**Significant at .01 level.

TABLE 9

UNADJUSTED AND ADJUSTED MEAN CHANGE IN HOURS WORKED, BY CHANGE IN PARENTS' LIVING ARRANGEMENT, RACE AND SEX

(Noninstitutional Males Aged 16-24 in 1975 Who Were in Their Parents' Households in 1968 and For Whom Hours Worked in 1967 was Ascertained)

Change in Parents' Living Arrangement/Race	Males		Females	
	Unadjusted Mean	Adjusted Mean	Unadjusted Mean	Adjusted Mean
Same Two Parents 1968 Until Left/White	937	953	689	692
Same One Parent 1968 Until Left/White	1,119	903	914	717
Lost One Parent Between 1968 and Left/White	1,018	1,011	619	717
Other/White	856	853	633	543
Same Two Parents 1968 Until Left/Nonwhite	804	811	485	503
Same One Parent 1968 Until Left/Nonwhite	647	700	539	562
Lost One Parent Between 1968 and Left/Nonwhite	841	831	340	477
Other/Nonwhite	424	355	426	390
Overall Mean	918		657	
Standard Deviation	852		751	
Eta^2	.015		.022**	
$Beta^2$	.013		.011	
F-value for Pattern Variable as opposed to additive model	0.86		0.17	

+Adjusted for the effects of: age in 1975, education in 1975, other family income/family needs in 1974, 1974 county unemployment rate, family income/family needs in 1967, 1968 parental head's education, whether 1968 parental head was white collar worker, whether mother was working in 1968, other family income/family needs 1974-1967, county unemployment rate 1974-1967, and change in own living arrangement.

**Significant at .01 level.

subdivision of this category into distinct types of change. Effects of coming from a stable one-parent family are not as large but are more interpretable. The effects are sizable only for males and then strongest with respect to change in work status. Nonwhite males from stable one-parent families are less likely to enter the work force than are their counterparts from stable two-parent families. The reverse holds for white males. The change in work hours, however, does not differ much with respect to whether the youth is from a stable one-parent or stable two-parent family, particularly if the youth is white.

IMPLICATIONS AND NEEDS FOR FURTHER RESEARCH

Major trends in living arrangements affecting youth include: (1) a decrease in the proportion coming from two-parent families, (2) a shift away from their parents' household and marriage toward one-person or one-parent households, and (3) a shift away from marriage with children toward marriage without children.

PSID data indicate that whether or not the youth is from a stable two-parent family tends to have relatively inconsequential implications for labor supply except for nonwhite males.[39] Nonwhite males from broken homes, predominantly those from stable one-parent families, tend to work less than their counterparts from stable two-parent families. This is particularly important for young nonwhite males since about one-third of them come from stable one-parent families. Apparently the atmosphere of a one-parent home tends to deter either the desire or the ability of nonwhite male youth to work. Better data on job opportunities and attitudes of the youth are needed to uncover the source of this effect. Since several studies have found little evidence

39. This does not correspond to the findings of Bowen and Finegan (1969), but their analysis of this effect was restricted to a younger age group (fourteen to seventeen year-olds), did not differentiate the effect by race, and used less current data.

of strong effects of attitudes on subsequent economic attainment,[40] the need is probably greatest in the area of better data concerning the access to work. The network for obtaining jobs both in terms of search, influence, and supply, may vary extensively with the youth's background.

With respect to own living arrangement, the PSID data indicates a strong relationship with labor supply. Males who left home to form married or one-person households increased their labor supply much more than their counterparts who remained in their parents' household, with those forming one-person households working somewhat fewer hours than those forming married households. Females who left home to form one-person, one-parent, or childless married households increased their labor supply considerably more than their counterparts who either remained in their parents' households or formed married households with children. In fact, females who formed one-person households worked about as much as males in the same situation.

Implications of these findings are not clear without better understanding of the cause and effect relationship between own living arrangements and labor supply. If changes in own living arrangement cause changes in labor supply, but not the reverse, then these findings indicate that recent shifts in living arrangements may have contributed substantially to increase labor supply of youth. However, more plausibly, causality runs in both directions, with labor supply affecting and being affected by own living arrangement. This analysis did not attempt to disentangle any interrelation between these two decision areas.

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40. See for example: Greg Duncan and Daniel Hill, "Attitudes, Behavior, and Economic Outcomes: A Structural Equations Approach," in Greg J. Duncan and James N. Morgan, Five Thousand Families--Patterns of Economic Progress III, (Ann Arbor: Institute for Social Research, 1975); James N. Morgan, "A Seven-Year Check on the Possible Effects of Attitudes, Motives and Behavior Patterns on Change in Economic Status," in G.J. Duncan and J.N. Morgan, Five Thousand American Families--Patterns of Economic Progress IV, (Ann Arbor: Institute for Social Research, 1976); Paul J. Andresani, "Internal-External Attitudes, Personal Initiative, and the Labor Market Experience of Black and White Men," Journal of Human Resources, Vol. 12 (Summer 1977); and G. J. Duncan and J.N. Morgan, "Sense of Efficacy and Changes in Economic Status--A Comment on Andresani," currently submitted to Journal of Human Resources.

Present data are not well-suited to analysis of the causal relationship between these two decisions. Various statistical methods could be used with data such as the PSID to analyze the interrelation, but these methods tend to be quite sensitive to model specification. Timing patterns with respect to the decisions could also be misleading since decisions are not necessarily executed in the same order in which they are reached. A more reliable instrument for understanding the causal relationship between living arrangement and labor supply would be a survey which directly asked youth about the interrelation. In effect, it would be a survey concerned with the economic socialization process, the process by which a young adult chooses a living arrangement and work situation.[41]

41. A proposal for a survey along these lines has been submitted to the National Science Foundation for review--"A Proposal For A Retrospective study of Economic Socialization" by J. N. Morgan, M. Hill, and A. Thornton: Institute for Social Research, 1977.

APPENDIX

TABLE A.1

CHANGE IN OWN LIVING ARRANGEMENT BETWEEN 1968 and 1975, BY SEX

(Noninstitutional Individuals Aged 16-24 in 1975
Who Were in Their Parents' Households in 1968
and For Whom Hours Worked in 1967 Was Ascertained)

Change in Own Living Arrangement Between 1968 and 1975	Males		Females	
	Number of Observations	Weighted Percent	Number of Observations	Weighted Percent
Left Home, Acquired Spouse, Had Children	130	11.5	203	17.8
Left Home, Acquired Spouse	92	9.5	135	13.1
Left Home, Had Children	3	0.2	114	4.5
Left Home to Live Alone	157	11.9	104	9.3
Left Home to Live With Other Adults	15	1.4	8	0.6
Did Not Leave Home	886	65.5	869	54.5
TOTAL	1,283	100.0	1,433	100.0

TABLE A.2

CHANGE IN PARENTS' LIVING ARRANGEMENT BETWEEN 1968 AND PRIOR TO THE YOUTH LEAVING HOME, BY RACE AND SEX

(Noninstitutional Individuals Aged 16-24 in 1975 Who Were in Their Parents' Households in 1968 and For Whom Hours Worked in 1967 Was Ascertained)

	Males		Females	
Change in Parents' Living Arrangement/Race	Number of Observations	Weighted Percent	Number of Observations	Weighted Percent
Same Two Parents Until Left/White	484	64.9	498	61.9
Same One Parent Until Left/White	41	5.4	61	7.2
Lost One Parent Between 1968 and Left/White	71	9.6	66	8.4
Other/White	28	3.6	28	3.4
Same Two Parents Until Left/Nonwhite	298	8.2	356	9.7
Same One Parent Until Left/Nonwhite	241	4.9	268	5.9
Lost One Parent Between 1968 and Left/Nonwhite	79	2.1	109	2.9
Other/Nonwhite	41	1.4	47	0.7
TOTAL	1,283	100.0	1,433	100.0

TABLE A.3

UNADJUSTED AND ADJUSTED PROPORTIONS OF YOUNG MALES CHANGING WORK STATUS BY CHANGE IN OWN LIVING ARRANGEMENT

(Noninstitutional Males Aged 16-24 in 1975 Who Were in Their Parents' Households in 1968 and For Whom Hours Worked in 1967 Was Ascertained)

	Entered Work Force		Left Work Force		Remained in Work Force		Remained out of Work Force	
Change in Own Living Arrangement	Unadj. Prop.	Adj. Prop.+	Unadj. Prop.	Adj. Prop.+	Unadj. Prop.	Adj. Prop.+	Unadj. Prop.	Adj. Prop.+
Left Home, Acquired Spouse, Had Children	.778	.789	.000	-.001	.192	.087	.030	.126
Left Home, Acquired Spouse	.791	.778	.001	.002	.197	.095	.011	.129
Left Home, Had Children	1.000[a]	.977[a]	.000[a]	.006[a]	.000[a]	.225[a]	.000[a]	.242[a]
Left Home to Live Alone	.767	.775	.018	.013	.159	.086	.055	.133
Left Home to Live With Other Adults	.507[a]	.419[a]	.000[a]	-.003[a]	.241[a]	.209[a]	.252[a]	.375[a]
Did Not Leave Home	.497	.497	.000	.002	.031	.080	.472	.420
Overall Mean	.590		.003		.083		.324	
Standard Deviation	.492		.050		.277		.468	
Eta^2	.073**		.013*		.071**		.193**	
$Beta^2$	.075**		.007		.005		.085**	

+Adjusted for the effects of: age in 1975, education in 1975, other family income/family needs in 1974, 1974 county unemployment rate, family income/family needs in 1967, 1968 parental head's education, whether 1968 parental head was white collar worker, whether mother was working in 1968, other family income/family needs 1974-1967, county unemployment rate 1974-1967, and change in parents' living arrangement/race.

[a]Figure based on fewer than 20 observations.

*Significant at .01 level.

**Significant at .05 level.

TABLE A.4

UNADJUSTED AND ADJUSTED[+] PROPORTIONS OF YOUNG FEMALES CHANGING WORK STATUS BY CHANGE IN OWN LIVING ARRANGEMENT

(Noninstitutional Females Aged 16-24 in 1975 Who Were in Their Parents' Households in 1968 and For Whom Hours Worked in 1967 Was Ascertained)

Change in Own Living Arrangement	Entered Work Force		Left Work Force		Remained in Work Force		Remained Out of Work Force	
	Unadj. Prop.	Adj. Prop.[+]	Unadj. Prop.	Adj. Prop.[+]	Unadj. Prop.	Adj. Prop.[+]	Unadj. Prop.	Adj. Prop.[+]
Left Home, Acquired Spouse, Had Children	.416	.374	.058	.051	.031	.010	.495	.565
Left Home, Acquired Spouse	.773	.665	.008	.000	.053	.048	.165	.287
Left Home, Had Children	.666	.727	.000	.002	.007	-.013	.327	.285
Left Home to Live Alone	.893	.793	.000	-.011	.052	.031	.055	.187
Left Home to Live With Other Adults	.790[a]	.767[a]	.000[a]	-.008[a]	.210[a]	.223[a]	.000[a]	.018[a]
Did Not Leave Home	.442	.494	.007	.013	.007	.020	.544	.473
Overall Mean	.535		.015		.023		.427	
Standard Deviation	.499		.122		.150		.495	
Eta^2	.112**		.027**		.026**		.130**	
$Beta^2$	.064**		.023**		.020**		.059**	

[+]Adjusted for the effects of: age in 1975, education in 1975, other family income/family needs in 1974, 1974 county unemployment rate, family income/family needs in 1967, 1968 parental head's education, whether 1968 parental head was white collar worker, whether mother was working in 1968, other family income/family needs 1974-1967, county unemployment rate 1974-1967, and change in parents' living arrangement/race.

[a]Figure based on fewer than 20 observations.

**Significant at .01 level.

TABLE A.5

UNADJUSTED AND ADJUSTED+ MEAN CHANGE IN HOURS WORKED BY CHANGE IN OWN LIVING ARRANGEMENT AND SEX

(Noninstitutional Individuals Aged 16-24 in 1975 Who Were in Their Parents' Households in 1968 and For Whom Hours Worked in 1967 Were Ascertained)

	Males		Females	
Change in Own Living Arrangement	Unadjusted Mean	Adjusted Mean+	Unadjusted Mean	Adjusted Mean+
Left Home, Acquired Spouse, Had Children	1,804	1,544	534	360
Left Home, Acquired Spouse	1,761	1,574	1,115	937
Left Home, Had Children	2,368[a]	1,961[a]	785	766
Left Home to Live Alone	1,405	1,212	1,442	1,216
Left Home to Live With Other Adults	1,420[a]	1,127[a]	1,167[a]	1,087[a]
Did Not Leave Home	537	651	436	576
Overall Mean	918		657	
Standard Deviation	852		751	
Eta^2	.396**		.207**	
$Beta^2$	.200**		.107**	

+Adjusted for the effects of: age in 1975, education in 1975, other family income/family needs in 1974, 1974 county unemployment rate, family income/family needs in 1967, 1968 parental head's education, whether 1968 parental head was white collar worker, whether mother was working in 1968, other family income/family needs 1974-1967, county unemployment rate 1974-1967, and change in parents' living arrangement/race.

[a]Figure based on fewer than 20 observations.

**Significant at .01 level.

EDUCATION, OCCUPATION, AND EARNINGS

By: David O'Shea

ABSTRACT

The probability that persons of equal educational attainment will have equal incomes is very low, as Jencks and his colleagues point out. However, disaggregation of data dealing with the education-income relationship shows that, while obviously a gamble, rewards for educational attainment actually are substantial among persons who succeed in acquiring access to professional, managerial, and technical type occupations. As these latter account for about 40% of all jobs, an economic incentive model remains viable as a basis for interpreting the motivation of students to compete for, and invest in, educational attainment.

In addition, disaggregated data show that two further perspectives, or models, illuminate other aspects of the motivations linking the educational and occupational systems. A social determinist, or sociological, perspective reveals that as the level of education in the population increases, employers raise entry level educational requirements, resulting in education actually creating its own demand, pressuring young men and women to stay on in school for a continually increasing length of time. Further, a social-psychological perspective on the education-income relationship shows that, mediating between years of schooling and occupational attainment, there is the tendency for a correspondence to exist between individual talent and psychological characteristics on the one hand, and the characteristics of given occupations on the other. Data supportive of all three models - the economic incentive, sociological, and social-psychological - are presented here, and some conclusions proposed.

INTRODUCTION

In 1972 Jencks et al. created quite a furor by pointing out that, despite the conventional wisdom, the probability of persons of equal educational attainment achieving equal incomes was remarkably low. For example, for white adult males, census data show that the correlation between years of schooling and annual

earnings is 0.35.[1] This tells us that years of schooling accounts for only 12% of the variance in earned income. However, controlling for the effects of family status and academic ability would reduce this to approximately 7%. The remaining 93% of unexplained variance Jencks et al. (1973) attribute to "luck."

On the face of it, these findings suggest that the pursuit of education, while no doubt of value in itself, may prove economically unrewarding. It must be emphasized, however, that the findings are based upon highly aggregated data and are reported in terms of average relationships. A more realistic picture emerges when the relevant data are disaggregated, either on the basis of specific occupational categories, or in relation to the position that persons occupy in the social structure of the economy as employers, managers, or workers. Both types of disaggregated data are presented here. They demonstrate that for about one third of the positions in the work force the returns actually are very substantial. The fact that there are such positions, and that higher education typically is a condition of access, makes investment in education at least as rational as investment in the stock market. Each contains an element of risk, but the potential rewards for those who are "lucky" serves as a major incentive.

In practice, of course, the fact that there are high economic returns to education within specific occupations is well known to the public, creating competition between social groups around the issue of equal access to educational facilities, as well as generating competition between individuals. Group competition finds contemporary expression in movements for the rights of minorities, and of women, leading to school desegregation and affirmative

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1. Christopher Jencks, Marshall Smith, Henry Acland, Mary Jo Bane, David Cohen, Herbert Gintis, Barbara Heyns, and Stephen Michelson, Inequality, A Reassessment of the Effect of Family and Schooling in America (New York: Harper and Row, 1973).

action programs. Competition between individuals within schools has helped bring about an alignment of the separate status structures of the occupational and educational systems. As Rehberg found from studying the progress over time of students in six New York State high schools,

> . . . at least as early as the ninth grade it is possible to distinguish systematically between groups of students on a wide range of variables which relate, in the short run, to their occupational attainment.[2]

Relevant variables include family status, intelligence, academic achievement, educational ambition, and self-image. Ninth graders who registered high across these variables were those students most likely to enter four-year colleges, and then proceed to professional and managerial occupations. Those ninth graders measuring low on the same variables were most likely to terminate schooling with the twelfth grade, and then take on blue collar or lower level white collar positions in the economy. Finally, the ninth graders who fell into the mid-position were most likely to enter community colleges, and then move on to employment as technicians or as aides to professionals in a variety of fields.[3]

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2. Richard A. Rehberg, The Two-Year College Entrant: Comparisons with the High School Graduate and with the Four-Year College Entrant (Binghamton, New York: Center for Social Analysis, State University of New York at Binghamton, 1976), p. 63.

3. Samuel Bowles and Herbert Gintis, Schooling in Capitalist America (New York: Basic Books, Inc., 1976). For Bowles and Gintis the coincidence of occupational and educational structures represents the outcome of what they call the correspondence principle. However, they over-interpret the meaning of this correspondence, arguing that it reflects not simply student, and parental, response to occupational incentives, but also the intent of dominant groups in society. The latter are alleged to influence educational policy so that the "educational system tailors the self-concepts, aspirations, and social class identifications of individuals to the requirements of the social division of labor." (p. 129) Actually, schools are notably ineffective institutions for influencing the personalities of their students. Both student attitudes and early cognitive development are largely products of pre-school experiences in the home, which even relatively intensive programs of compensatory education fail to change.

Clearly, a good deal of competition and self-selection is involved as students seek their place within the academic and social structures of their schools, and balance their backgrounds, abilities, personalities, and academic performance against parental expectations and their own career interests.

This in-school competition is biased in favor of students from higher status backgrounds, as Bowles and Gintis emphasize.[4] However, legitimating the process is the fact that lower status students with academic ability also succeed. For example, using longitudinal data on Wisconsin high school students, Sewell demonstrates that parental status of students accounts for 18% of the variance in postsecondary schooling attained.[5] When academic ability of students is added to parental status in the prediction model, the proportion of explained variance in schooling attained increases to 30%. In effect, student ability, net of parental status, uniquely explains 12% of the variance in years of schooling.

As the competition for educational attainment probably finds its strongest incentive in the potential economic rewards within the occupational structure, for the first section of this paper an economic incentive model provides the organizing perspective. Such a model does not, of course, identify all relevant factors involved in the decisions that individuals make regarding the length of time they commit to formal schooling, as becomes apparent when one looks at student motivation from other perspectives.

THEORETICAL PERSPECTIVES

Apart from the pull of monetary rewards associated with high status occupations, also operative as an incentive for schooling is the push generated by the fact that, as Collins argues,[6] education

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4. Ibid.

5. William H. Sewell, "Inequality of Opportunity for Higher Education," American Sociological Review, vol. 36 (October 1971), pp. 793-809.

6. Randall Collins, "Functional and Conflict Theories of Educational Stratification," American Sociological Review, vol. 36 (December 1971), pp. 1002-19.

creates its own demand. The higher the educational level in the population, the higher employers set their entry requirements. These requirements then react back upon the educational supply, pressuring young people to stay in school longer, thus raising the level of education in successive age cohorts in the population.[7] This occurs despite the fact that, as Folger and Nam point out, there is little evidence of the need for increased entry level knowledge or skills in most occupations. Not surprisingly, therefore, once job entry is attained, educational background receives little additional economic reward in about two-thirds of the occupational categories used by the Bureau of the Census, as we shall see.

Social pressure to stay in school, generated by escalating job entry requirements, falls within the purview of a social deterministic, or sociological, model of educational attainment. However, apart from the pressures accounted for by the economic incentive and sociological models, yet another source of influence upon individual educational decision making is identified by a social-psychological model. This is the influence of personal talent and interests, factors that constrain individual ambitions and career plans. As Gottfredson points out,[8] studies of the contribution of education to earnings typically concentrate upon a single dimension at both the education and income sides of the relationship. On the education side, ability is taken to be intellectual

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7. John K. Folger and Charles B. Nam, "Trends in Education in Relation to the Occupational Structure," Sociology of Education, vol. 38 (1964) pp. 19-33. For a more extended discussion of the problem of credentialling see Ronald Dore, The Diploma Disease: Education, Qualification and Development (Berkeley, Cal.: University of California Press, 1976).

8. Linda S. Gottfredson, A Multiple-Labor Market Model of Occupational Achievement (Baltimore, Md.: Center for Social Organization of Schools, Johns Hopkins University, Report No. 225, 1977.)

only, the diversity of human talents being ignored. On the earnings side, work is treated as a homogeneous activity, perhaps varying between levels of occupational status. To go beyond this limited approach, Gottfredson has analyzed education-income relationships in terms of occupations classified according to six categories developed by Holland on the basis of research in vocational psychology. These six types relate to activities preferred and competencies required in given occupations.

While the sociological model overlaps the economic one, it being difficult to separate out the relative contribution of push and pull factors to educational attainment, the social psychological model complements the economic, helping to interpret the relationship between years of schooling and subsequent earnings. Data relative to all three models are presented here, beginning with the economic model, as this has the greatest utility in accounting for educational attainment within the population.

THE ECONOMIC INCENTIVE MODEL

As longitudinal data have become available, these have made possible a series of analyses of the causal determinants of earned income. Some of the more productive studies have utilized data that were initiated with a survey of high school seniors in Wisconsin in 1957.[9] These data show that a large part of the effectiveness of education in facilitating higher earnings result from the fact that education enables people to enter higher status occupations. For example, Griffin,[10] using the Wisconsin data, re-

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9. For details of the Wisconsin survey see William H. Sewell, Archibald O. Haller and George W. Ohlendorf, "The Educational and Early Occupational Status Attainment Process: Replication and Revision," American Sociological Review, vol. 35 (December 1970), pp. 1014-27.

10. Larry J. Griffin, "Specification Biases in Estimates of Socioeconomic Returns to Schooling," Sociology of Education, vol. 49 (April 1976).

gressed earnings on a number of predictor variables, including parental education, occupation, and income. To these were added characteristics of the respondents, including mental ability, years of education, and occupational status. The coefficients for each variable indicate its impact upon earnings, net of the influence of all other variables in the regression. Results show that each $1,000 of parental income is worth $112 of son's earnings. Each year of education is worth, on average, $97. Occupational status generates $15 per annum for each point on the status scale, which runs from 1 through 98. Of special interest, though, is the fact that when occupational status is removed from the regression, the earnings generated by each year of education jump from $97 to $206, an increase of 112%. Evidently a large part of the effect of education is mediated by occupational status, as becomes evident when the economic returns to education are disaggregated by types of occupation.

Disaggregating the Data

As occupational status plays a substantial mediating role between years of education attained and earned income, the occupational structure appears to be potentially the most fruitful basis in terms of which to explore the education-income relationship in more detail. There are, in fact, two approaches to the contribution of education to earnings that have promise for our purposes. Stolzenberg,[11] has analyzed economic returns to education separately for each of the 11 census categories of occupational status. Wright and Perrone have looked at education-income relations within economic classes,[12] the latter being defined

11. Ross M. Stolzenberg, "Education, Occupation, and Wage Differences between White and Black Men," American Journal of Sociology, vol. 81 (September 1975), pp. 200-323.

12. Erik Olin Wright and Luca Perrone, "Marxist Class Categories and Income Inequality," American Sociological Review, vol. 42 (February 1977), pp. 32-55.

by the role people play within the structure of social relationships.

Turning first to Stolzenberg's approach,[13] he separated earnings and education on the basis of data from the 1960 U.S. Census.[14] Using the data for white males, he regressed earnings on education separately for each of four age groups and ten categories of occupational status. This approach generates forty separate regression coefficients providing estimates of the effect of education upon earnings. Stolzenberg's interest in this procedure was to demonstrate marked non-linearities in the education-earnings relationship, and interaction between age and education within this relationship. The non-linearities are evident when the distribution of regression coefficients is diagrammed in Figure 1, but the most striking finding is the very large difference in economic returns to education between the highest and lowest status occupation categories.

As shown in Figure 1, returns to education between occupations came closest at the early stages of persons' careers for the earnings data gathered by the 1960 census. Even here though, for the twenty-five to thirty-four years of age group, the gap was $264 between the return of $108 for one year of schooling for clerical workers and the return of $374 for managers, officials, and proprietors. By age thirty-five to forty-four the gap had greatly widened. The return for clerical workers increased to $215, but that for managers, officials, and proprietors rose much faster, reaching $961. In this same age group the largest gap was between laborers, at $146, and professional, technical, and kindred workers, who experienced a return of $1,042.

Overall, two occupational categories that employed 27% of white

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13. Stolzenberg, op. cit.

14. U.S. Bureau of the Census, U.S. Census of Population: 1960. Subject Reports. Occupation by Earnings and Education, Final Report PC(2)-7B (Washington, D.C.: Government Printing Office, 1963).

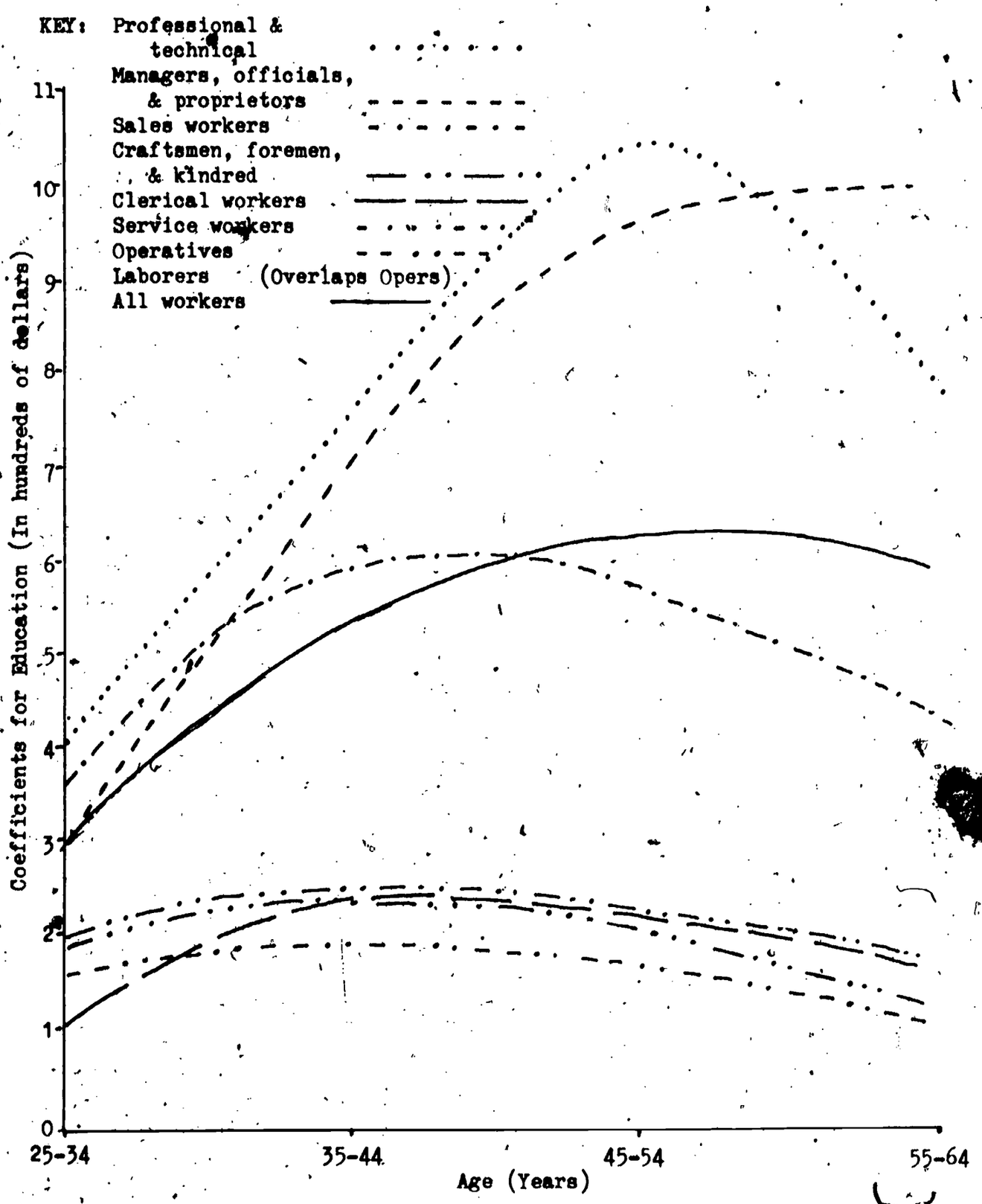

Figure 1.--Coefficients generated by regressing white males' earnings on years of school completed in 1960, by major occupation group and age. Based on data in Table 2, p.310: Ross M. Stolzenberg, "Education, Occupation, and Wage Differences between White and Black Men." American Journal of Sociology, 81 (2):299-323, 1975.

males in 1970 - professional and technical workers, managers, officials and proprietors - enjoyed extraordinarily high returns relative to all the others. Sales workers came a close third, a category employing 7.4% of males in the 1970 workforce. The balance, 66%, fell into the remaining occupational categories, among which returns were relatively low, and declined after early middle age. These data help interpret the lack of academic motivation characteristic of many students in high school who see their future as most likely falling into one of the lower status occupational categories.

Actually, of course, the magnitude of returns to schooling shown here are probably overestimated by 35-40%, according to Griffin.[15] This is the proportion of the education-income relationship that is due to the influence upon both variables of parental socioeconomic status and the individual's own mental ability. Controlling for these factors would reduce the dollar amounts and narrow the gaps somewhat, but the overall pattern would remain the same.

Stolzenberg's approach is expanded upon from a slightly different direction by Wright and Perrone.[16] These authors argue that in predicting income on the basis of education, occupational status, and age, one can add to the predictive power of the statistical model by adding data on the social class of members of the workforce.

Returns to Education by Social Class

In exploring the contribution of social class, net of occupational status, to income returns for years of schooling, Wright and Perrone take the view that occupational status and social class represent quite different, though overlapping, sets of relationships.

"Occupation" designates positions within the technical

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15. Griffin, op. cit., p. 135.
16. Wright and Perrone, op. cit.

division of labor, i.e., an occupation represents a set of activities fulfilling certain technically defined functions. Class, on the other hand, designates positions within the social relations of production, i.e., it designates the social relations between actors."[17]

The class typology used by Wright and Perrone is based upon three questions asked of respondents in the two surveys from which their data are derived.[18]

1. "Most of the time on the job do you work for yourself or someone else?"
2. "If you are self-employed, are there any people who work for you and are paid by you?"
3. "Do you supervise anybody as part of your job?"[19]

Using data generated by about 1,500 respondents to a national sample of adults interviewed in 1969 for a survey of working conditions, the above three questions generated five categories of social class, as illustrated in Table 1.

The survey responses also provided information on level of education and annual income, a slightly different variable from annual earnings, but closely correlated. Given these data Wright and Perrone separated respondents into the class categories of employers, managers, and workers. They omitted the petty bourgeoisie and ambiguous categories, numbers being too few. Within each class they regressed annual income on education, with the results diagrammed in Figure 2. Education is coded by level rather than by years (0 = elementary school or less; 1 = completed elementary .

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17. Ibid., p. 35.
18. Ibid., p. 36.
19. Ibid.

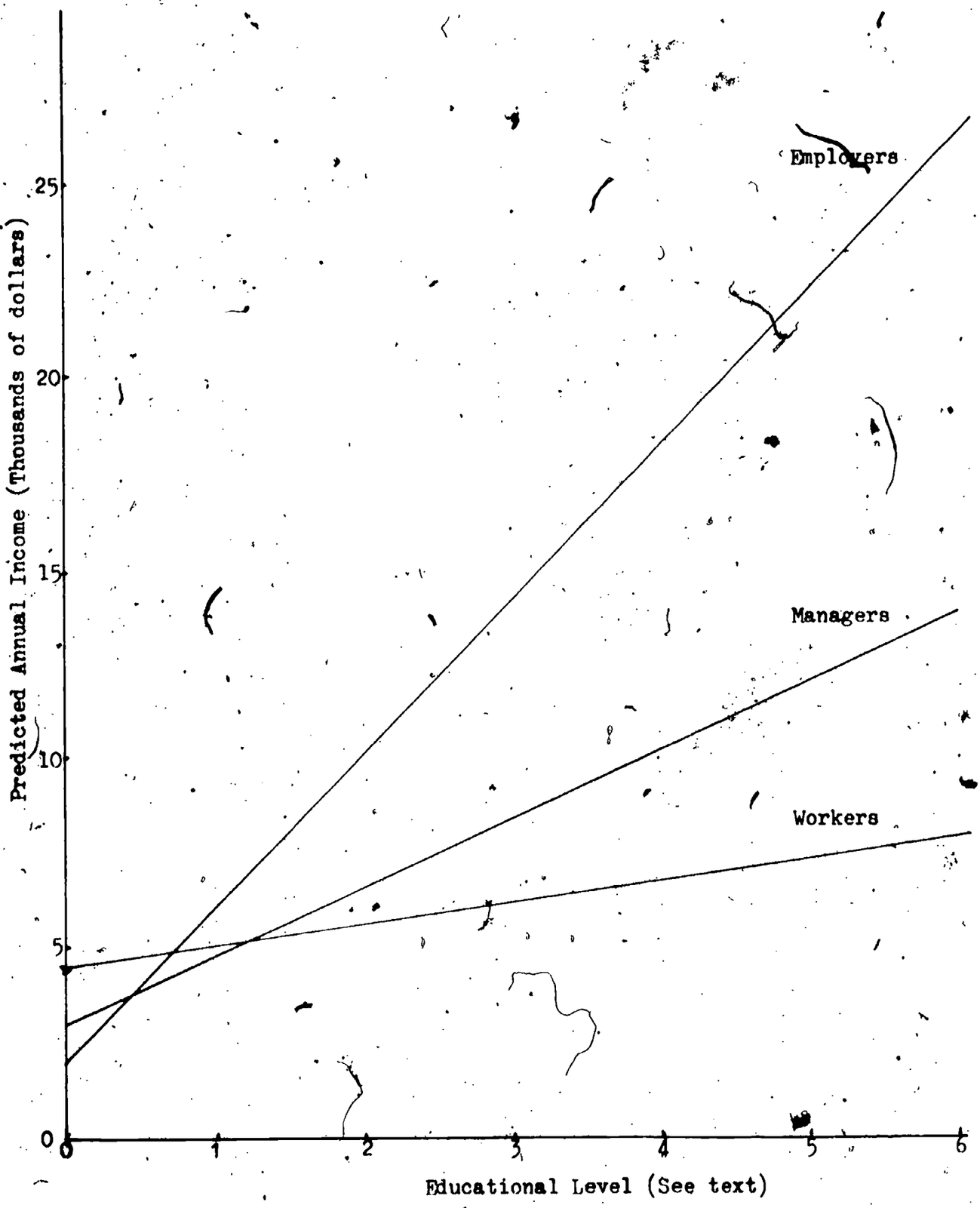

Figure 2.--Regression of income on education, by categories of social class, for nonfarm, full-time participants in the labor force. Data from a 1969 national sample of 1,533 adults, 16 years of age and over. Based upon Figure 2, p. 45; Erik Olin Wright and Luca Perrone, "Marxist Class Categories and Income Inequality." American Sociological Review. 42 (1): 32-45, 1977.

Table 1

CRITERIA FOR SOCIAL CLASS[a]

CLASS	Self-Employed	Have Employees	Have Subordinates on the Job	Employed	N	%
Employers	Yes	Yes	Yes	No	110	7.4
Managers	No	No	Yes	Yes	561	37.4
Workers	No	No	No	Yes	739	49.2
Petty Bourgeeoisie	Yes	No	No	No	65	4.3
Ambiguous	Yes	No	Yes	No	24	1.8

[a]Source: Table 3, p. 37. Wright and Perrone. See text.

school; 2 = some high school; 3 = high school; 4 = some college; 5 = college degree; 6 = postcollege). The actual regression coefficients for college within each of the class categories are:

Employers	$4,091
Managers	1,797
Workers	678

These coefficients represent the increment in income for each additional stage of education. When occupational status, age, and number of years in present job are added to education in the regression the education coefficients reduce but remain high, testifying to the independent contribution of social class, net of the other three variables including occupational status. The revised coefficients are:

Employers	$3,170
Managers	1,477
Workers	607

In terms of variance explained, education, age and occupational status were found to explain 19.1% of the variance in income. When social class was added this increased the proportion of variance explained by 7.6%, for a total of 26.7%, again indicating the substantive importance of the class variance.

The very large differences in returns to education within the three social classes as demonstrated by Wright and Perrone parallel Stolzenberg's findings presented earlier. The differences in returns to education evidently are an interactive phenomenon, resulting from characteristics of occupational settings. Economists assume that, in general, earnings are an index of the contribution of each individual to the overall productivity of the economy. Apparently, therefore, education does enhance individual productivity among employers and managers, and among persons in professional, technical, and sales occupations. In these latter occupational categories, earnings increased substantially with level of education. This is rather what one would anticipate. Not anticipated is the relatively weak impact of education upon productivity (earnings) in the remaining occupational categories, and these categories account for 60% or more of the employed labor force.

However, as noted earlier, even among occupations where education has relatively little impact upon earnings, entry is increasingly dependent upon the possession of educational credentials. The consequences of this "push" factor upon the supply of education in the labor force are reflected in changes over time in the pattern of relationship between given occupational categories and the level of education of those employed in these categories.

THE SOCIOLOGICAL MODEL

Despite low returns to education for roughly 60% of employed persons, most of whom are found in blue collar, service, and farm occupations, the level of education among this 60% has been steadily rising. It is plausible to propose, therefore, that a large, if

indeterminate, proportion of this rise reflects pressure generated by increases in job entry educational requirements which, in turn, have escalated in response to the increased availability of persons with high school and post-secondary certificates. In effect, a typical vicious, or perhaps in this case beneficent, circle has been at work, an interpretation that finds some support from data regarding change over time in median levels of education within the labor force.

Between 1959 and 1972 the median years of education in the total employed labor force rose from 12 years to 12.4 years. However, within specific occupational categories, and within the black population, changes were much more dramatic. Looking first at the data for black men and women, shown in Table 2, from 1959 to 1972 black men gained by 3.4 years and black women by 2.8 years. Whites, by contrast, changed very little, and what change did occur represents a convergence of both men and women to the same level of 12.5 years. In fact, the overall pattern of change suggests a convergence within all sectors of the population, rather than a tendency toward continued upward movement over time.

TABLE 2

MEDIAN YEARS OF EDUCATION COMPLETED AMONG CIVILIAN LABOR FORCE, BY SEX AND COLOR, FOR 1959 and 1972 (ALL OCCUPATION GROUPS)[a]

Color	Sex	1959	1972	Change 1959-1972
White	Male	12.0	12.5	0.5
	Female	12.3	12.5	0.3
Black	Male	8.2	11.6	3.4
	Female	9.4	12.2	2.8

[a]Source: Table B-42, p. 181. Manpower Report of the President, 1973. U.S. Dept. of Labor.

This trend toward a stable upper limit appears also when one looks at change within specific occupational categories. These changes, as experienced by white males, are diagrammed in Figure 3. Occupational categories within which median years of education were lowest in 1959 experienced the largest gains by 1972. Farmers, farm laborers, and nonfarm laborers moved up 2.5 years. Service workers gained by 2 years. These latter four occupational categories together accounted for 17.5% of the forty-three million white males employed in 1970. Overall, 40.5% of employed males fall into the blue collar occupations, among which the median years of education rose 1.2 years for craftsmen, and for operatives 1.8 years. The remaining occupational categories, all in white collar sectors, experienced little change over the thirteen year period, having begun at or above the 12.5 years mark in 1959.

These data for white males suggest three trends. First, occupations in the highest status category, professional and technical workers, are distinctive in their very high median years of education, which has remained at over 16 years since 1959. Second, the median years of education in managerial, administrative and sales occupations has been moving slowly toward 13 years. Thirdly, all other occupational categories are converging over time with the median for clerical work, which was 12.6 years in 1972, almost unchanged from 12.5 years in 1959. As these latter categories account for two-thirds of all employed males, their educational levels strongly influence the aggregate median, and as we saw earlier, there is little economic incentive for persons to go beyond high school if they enter clerical or blue collar jobs, income returns to education in these jobs being minimal. By contrast, returns to education in the higher level professional and managerial positions are substantial.

Though not presented here, the pattern of change in median years of education for white women is very similar to that for men,

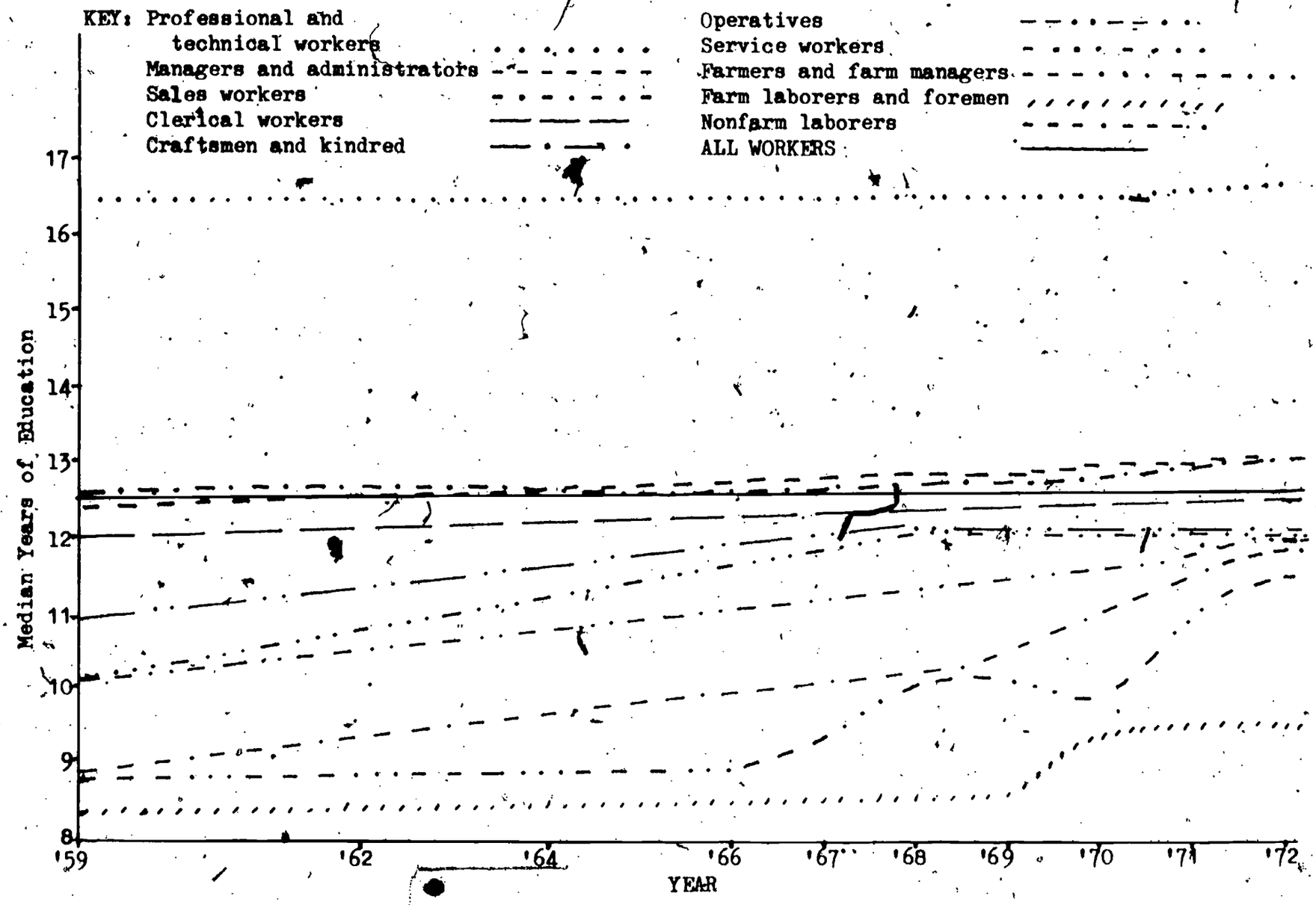

Figure 3. - - Changes from 1959 to 1972 in median years of school completed by males in the employed civilian labor force, by census categories of occupations. Data from Table B-12, p. 181, Manpower Report of the President, 1973. U.S. Dept. of Labor.

while their respective distributions between occupations differ. Women are concentrated in clerical rather than blue collar work. Among blacks, though overall there was a large increase in education, this was not true of those in occupational categories where the black median already was close to the white level in 1959. Specifically, black professional and technical workers had a median of 16 years of education in 1959 and in 1972, and black clerical and sales workers were close to 12.5 years at both times. The large changes in levels of education between 1959 and 1972 among blacks, as among whites, occurred not in the higher status occupations but in the blue collar, service, and farm categories.

In interpreting these data on change over time, referring back to Figures 1 and 2, one can argue that if increased educational levels within many occupational categories results from actual job needs for higher levels of pre-training, this fact would be reflected in a substantially stronger relationship between education and earnings than presently exists. The more parsimonious interpretation is that demand for educational requirements goes up as the supply of educated manpower increases.

Further insight into factors associated with differences in returns to education is provided by Gottfredson's work.[20] In this she explores the possibility that psychological factors orient individual job choices, thus mediating between level of education and occupational status, and therefore influencing the education-earnings relationship. Gottfredson's approach calls for a more complex view of the nature of the labor market. The latter is conceived of as being divided into multiple sectors, each sector attracting persons with distinctive talents and interests.

THE SOCIAL-PSYCHOLOGICAL MODEL

Gottfredson argues that education is rewarded differently be-

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20. Gottfredson, op. cit.

tween occupations in part because occupations vary considerably in the extent to which academic preparation has actual utility, even though required for entry. Some occupations

> "require skills primarily for working with people, whereas others require skill for working with data or things. We might expect that schools do not foster all the types of talent that are important in the occupational world. In turn, we would not expect education to be as valuable in the lines of work that require non-academic talent." [21]

To explore these possibilities, Gottfredson classifies occupations by means of a typology developed by John Holland on the basis of research in vocational psychology. Holland allocates occupations into six types according to the activities performed and the competencies required. These types are labelled realistic, investigative, artistic, social, enterprising, and conventional. By way of examples, sales and management jobs would be in the enterprising category; science and medicine in the investigative; clerical work and accounting in the conventional; blue collar jobs and engineering in the realistic, and education and social service in the social.

Holland assumes that education contributes differently to worker productivity within each of his six types, an assumption that can be tested by adding the types to the usual statistical model for predicting income on the basis of education and occupational status. Gottfredson has done this, using a 1/1000 sample developed by the 1970 census of white males in the full time

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21. Linda S. Gottfredson, "Differential Educational Payoff Models and Theories of the Diversity of Human Talents," in James M. McPartland and Edward L. McDill, organizers, Alternative Research Perspectives on the Effects of School Organization and Social Contexts (Baltimore, Md.; Center for Social Organization of Schools, Johns Hopkins University, Report No. 234, 1977), pp. 1-2.

civilian, nonfarm, labor force.[22] The sample size was 27,067. The data from the sample were used to predict income on the basis of years of education, weeks worked in 1969, hours worked during the survey week, and occupational prestige. These variables explained 25.4% of the variance in income. Adding dummy variables for the Holland types increases the variance explained to 31.1%, a substantial proportionate increase.

Insight into the actual pattern of differences between Holland's types in terms of income returns to education is provided by diagramming these, as in Figure 4. Gottfredson generated these data simply by regressing income on education. The lines shown in Figure 4 join the computed regression coefficients for education generated by running the regression equation separately for each of four age groups, and the six types of occupations. Among the types, enterprising occupations obviously incorporate the jobs having the highest returns to education. This category overlaps the census classifications of sales, managers, officials, and proprietors, that register high in Stolzenberg's analysis, and the manager and employer categories used by Wright and Perrone. As shown in Table 3, about one quarter of all employed men, aged thirty-six to forty-five, fall within the enterprising type. Reflecting the technological character of our society, the realistic type incorporates the jobs held by more than half of all employed men.

With the realistic and enterprising occupations accounting together for 80% of men in the sample, the remaining 20% are distributed between the investigative, social, conventional, and artistic types.

Educational characteristics of men within the six occupational types are suggestive of the pattern of linkages to the educational system. Looking at the third column of Table 3, one can see the

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22. Gottfredson, A Multiple-Labor Market Model, op. cit.

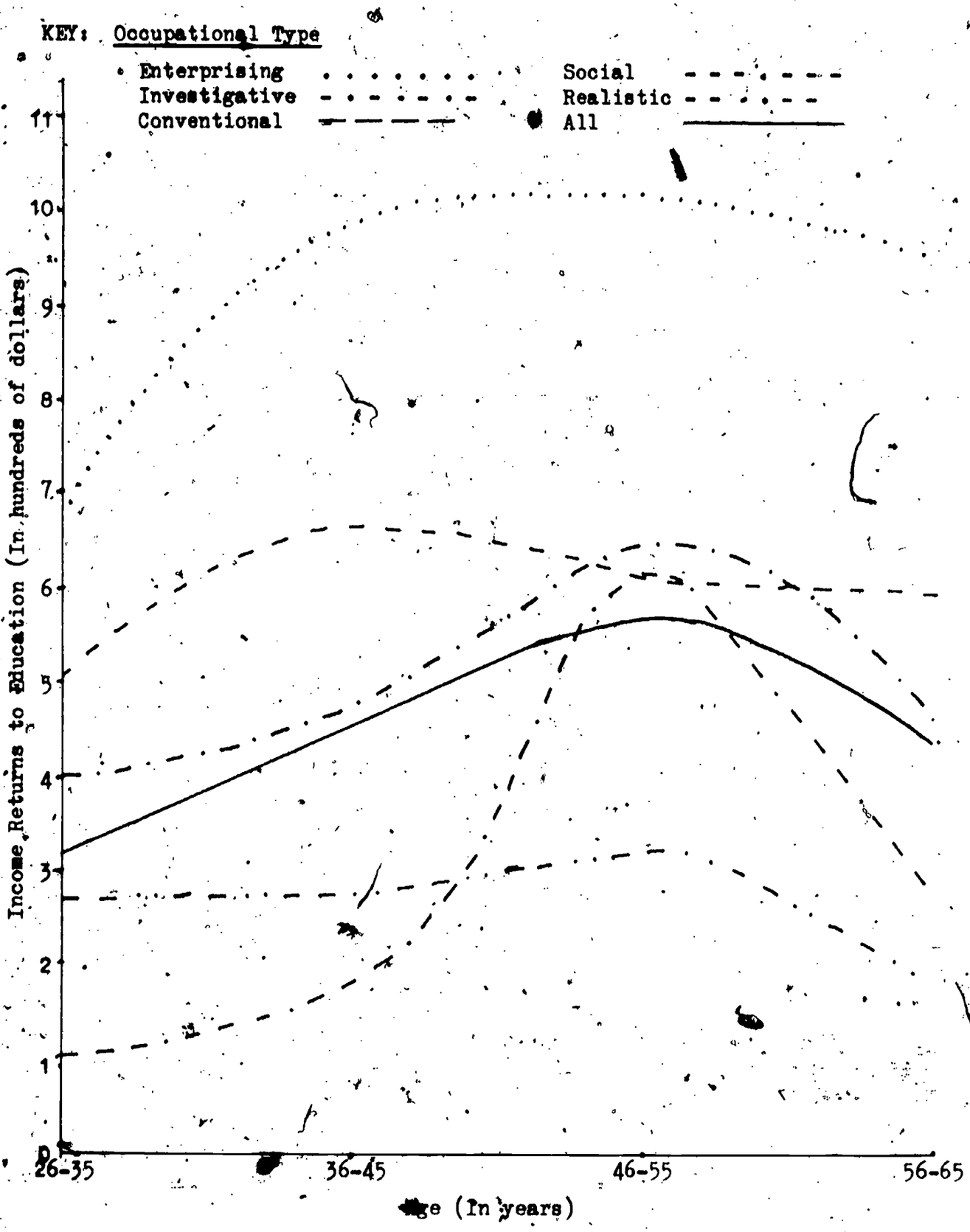

Figure 4.-- Coefficients for education from regressing income on education, for men in full-time, civilian, nonfarm occupations, by age. Derived from Table 7, p. 43, Linda Gottfredson, A Multiple-Labor Market Model of Occupational Achievement. Baltimore, Md., Center for Social Organization of Schools, Johns Hopkins University. Report No. 225, 1977.

TABLE 3

DISTRIBUTION OF WHITE MALES IN CIVILIAN, NONFARM, LABOR FORCE IN 1970, AGED 36-65, BY TYPE OF OCCUPATION, AND BY PERCENT OF ALL EMPLOYED MALES HAVING 16 OR MORE YEARS OF EDUCATION BETWEEN AND WITHIN TYPES OF OCCUPATION[a]

Type of Occupation	Employed males	Percent men with 16 or more years education between types	Percent men with 16 or more years education within types
Realistic	53.8	10.2	3.1
Enterprising	25.6	38.6	24.7
Investigative	7.4	20.8	45.1
Social	5.8	19.2	54.2
Conventional	5.8	7.2	20.3
Artistic	1.6	4.0	55.8
Total	100.0	100.0	---
N	19,286	3,164	---

[a]Source: Adapted from data provided in Table 8, p. 44, Linda S. Gottfredson. A Multiple-Labor Market Model of Occupational Achievement. (See text).

proportion of men within each type that possess sixteen or more years of education; in effect, the proportion of college graduates. Three types come close to 50%: the investigative, social and artistic. The investigative and social have large proportions of scientists, university faculty members, teachers and social workers, all of which are jobs that require a higher education. However, among

all persons in the sample who have college degrees, the largest single concentration is within the enterprising type occupations, as shown in column 2 of Table 3, the type also that provides the highest economic returns to education. Presumably the relationship is not coincidental.

Realistic occupations, with the lowest returns to education, attract 10.2% of all college graduates in the sample, though of all men in realistic occupations only 3.1% are college graduates, as shown in column 3 of Table 3. Most of these probably are engineers. The educational disparity between the enterprising and realistic occupations is further emphasized if one looks at the proportions of men in each who terminated schooling at the twelfth grade, or below. Among all men in the sample the proportion is 72%. For the enterprising type occupations the proportion falls to 56%, but rises to 90% for those in the realistic category. Associated with these differences in educational levels, and returns to education, are parallel differences in mean income. In 1969, for men aged thirty-six to forty-five, those in realistic occupations had a mean income of $8,992 compared to $14,346 for those in the enterprising category.

From the point of view of the educational system, the low returns to education in realistic occupations is a serious issue, given the number of people involved. In 1970 the realistic category accounted for close to 54% of all white employed men, and 80% among blacks. Students who find themselves poorly fitted, or unmotivated, to pursue postsecondary education, and who perceive their future as being in a realistic type occupation, are not being unreasonable when they argue that education, at least beyond the twelfth grade, is not particularly relevant for them. To transform the motivational climate among such students would require a transformation of the structure of rewards for education in realistic occupations, though how this could be done for jobs in which academic training adds little to individual productivity is difficult to fathom.

The typical alternative of providing vocational training is of doubtful value in the context of lifetime careers, though it may be useful as a means of keeping some students occupied while they are in school. A compromise might be to accept the fact that half the jobs in society are unlikely to reward academic training beyond that required to meet minimum levels of educational certification: then, proceed to explore opportunities for students to achieve status, if not always income, outside their regular occupations. In effect, one would aim to legitimate the notion that education should prepare for leisure as much as for work. More emphasis could be placed upon music, art, and crafts, expanding greatly the existing extra-curriculum, within which athletics provides an excellent model.

Of course, in the case of black men and women, and of white women, there is need for substantial changes within the existing occupational structure. The problem here is one of redistributing people between occupations. Within categories of occupations, as both Stolzenberg and Gottfredson report,[23] returns to education for blacks are less than for whites. Gottfredson,[24] and also Wright and Perrone,[25] found the same to be true for women. Further analysis, by Stolzenberg for blacks,[26] and by Gottfredson for both blacks and women,[27] indicates that the source of the differential returns, as well as lower incomes, is not discrimination in salary policies so much as differential patterns of recruitment. Within a given occupational status level, or social class level, blacks and women receive positions in the lower paying jobs within that category. In

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23. Gottfredson, Ibid., Stolzenberg, op. cit.
24. Gottfredson, Ibid.
25. Wright and Perrone, op. cit.
26. Stolzenberg, op. cit.
27. Gottfredson, A Multiple-Labor Market Model, op. cit.

terms of occupational types, Gottfredson found black males concentrated in the realistic category, and women in the social and conventional categories. Over time, the combination of affirmative action programs and changed socialization patterns, especially regarding sex role stereotypes, should generate more balance in the distributional patterns of blacks, women, and minorities generally, across occupations.

CONCLUSIONS

In summary, while the overall contribution of education to earnings is low relative to the contribution it makes to the attainment of occupational positions, disaggregation of the data in terms of categories of occupations reveals that for about one-third of all jobs the economic returns actually are rather high. This finding reinforces the traditional viewpoint of economists that the potential of financial returns to education is a major incentive for students, and that this incentive is one of the more important processes linking education and work.[28] Given the likely returns, both students and their parents demand schools as a resource in the competition for occupational status and earnings.

This, then, is the situation in general. Clearly, there are particular instances of distortions in the competitive process, and these are most visible in the case of minorities and of women.

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28. For summary discussion of the economics of education see Mary Jean Bowman, "The Human Investment Revolution in Economic Thought," Sociology of Education, vol. 39 (Spring 1966), pp. 111-37. For a more detailed approach to the disaggregation of education-income relationships than presented in this paper see Richard S. Eckhaus, Estimating the Returns to Education: A Disaggregated Approach (Berkeley, Cal.: The Carnegie Commission on Higher Education, 1973). Among other things, Eckhaus finds that if one uses hourly earnings rather than annual earnings as the dependent variable, returns to education for professions come much closer to the returns for nonprofessionals, the latter typically putting in less hours per week in their occupations.

Resolution of these distortions, which inhibit persons entering occupations commensurate with their level of education, requires continuation of affirmative action programs. Ultimately, equalizing access to the occupational structure is likely to be the most effective way of equalizing educational attainment between groups in society, at least to the extent that attainment really is a response to occupationally based incentives.

The most troubling finding, of course, is that while education pays off in a sufficiently high proportion of jobs to create powerful incentives among students to compete for these positions, thus raising the general level of education in the population as a sort of spillover effect, a majority of students eventually arrive in jobs for which returns to education are minimal. Given this, it would seem worthwhile to explore ways in which students might also be trained in nonacademic skills which would be serviceable for their personal development, if not their economic progress.

A related issue, of course, is the question of student motivation to acquire an education. Economic incentives and the ambition to develop personal talents no doubt are dominant, and complementary, influences. The major problem lies with those students who respond to neither of these influences, but are carried along within the educational system by social pressures that demand the acquisition of educational credentials. As the source of this problem is within the occupational rather than the educational system, more research is required regarding the conditions under which formal education really does, or does not, contribute toward job performance.

Finally, to complete the picture of education-work relations we not only need to pursue in more detail the analysis of the occupational structure and its linkages to various levels and types of education. Also necessary are data on the reverse of the occupational structure-- the structure of individual careers within and

across occupations. As Spilerman notes,[29] education "provides status and earnings rewards through facilitating access to valued career lines, through differentiation among entrants with respect to rate of advancement, or through a combination of both." Career analysis can help reveal the actual processes through which education enhances individual productivity and earnings. Such analysis also has potential for a more detailed understanding of unemployment, helping to specify the conditions under which people with different background characteristics, and in different occupations, enter and exit the occupational structure. Unemployment, like education, takes its meaning from the structure of employment, and ultimately can only be dealt with in terms of its consequences for the labor market as a whole.

29. Seymour Spilerman, "Careers, Labor Market Structure, and Socioeconomic Achievement," American Journal of Sociology, vol. 83 (November 1977), p. 585.

ALIENATION AND ADJUSTMENT TO LIMITED PROSPECTS

By: David Gottlieb

ABSTRACT

This paper seeks to provide information with regard to matters of alienation and adjustment to limited prospects as experienced by disadvantaged youth. A second task is to identify the ways in which important attitudes, experiences, and behaviors of poor youth may not be reflected in current employment surveys.

An analysis of the available literature and data leads to the conclusion that very little is, in fact, known about how the young, particularly those who are poor, perceive or respond to limited opportunities. Serious question is raised as to the validity and usefulness of employment data currently being collected. Clearly, knowing the percentage of youth in the labor force or the percentage employed or not employed does not tell us very much about how youth respond to their work and job status.

Further, the available data and literature frequently treat the young as a monolith, failing to differentiate among youth of different ages, socio-economic backgrounds, race, ethnicity, sex, or place of residence. Multivariate analysis is not a characteristic of current methodologies.

Moreover, most surveys do not take into consideration that employment is a two-sided coin involving the potential employee and the potential employer. The overriding tendency is to place the burden of proof upon the potential employee by focusing upon the perceived shortcomings of the individual as opposed to the barriers established by potential employers. The data do more than suggest that failure to gain employment may be more the result of work force barriers than a lack of skill or desire on the part of the young.

Reference is also made to the existence of a dual labor market: one which consists of jobs which are considered appropriate for youth and a "regular job market" which is reserved for adults. The majority of jobs in the youth market, while perhaps functional for youth in school, summer or holiday employment, or part-time work, neither require much in the way of skills nor do they provide an opportunity for an adequate transition into the regular, adult job market.

Finally, efforts are made to identify a number of investigative areas and strategies which, if pursued, could provide systematic and empirical answers to the critical question of youth reactions and responses to perceived and real barriers.

My assignment here is twofold: first, to deal with the issue of alienation and adjustment to limited prospects as experienced by disadvantaged youth; and second, to identify the ways in which adjustment styles might or might not influence how these youth respond to employment surveys. Within the framework of our concern for youth and matters of employment, my task can be restated in the following way: "What are the behavioral and attitudinal responses of poor youth when confronted with barriers to employment?"

Unfortunately, precise answers to these questions are difficult to find. The combination of irrelevant data, inappropriate methodologies, and a lack of consensus as to the meaning of such terms as alienation and adjustment allow for little more than speculation, heady inference, and an occasional reference to scattered empirical evidence.

The problem is made all the more complex since even at this late date we have not been able to differentiate among the various youth groupings which might fall into the category of disadvantaged. I think we can all agree that poor youth are hardly a monolith. Income level alone may be an effective method for determining eligibility for entrance into training programs, but it is not an effective mechanism for identifying critical population differences. Further, despite a variety of methodological innovations and national surveys no one seems really to believe that we have a fairly precise fix on just how many youth are employed or unemployed; the factors which lead to acceptance or rejection of employment opportunities; how much of the unemployment variation among youth can be explained by their rejection of jobs as opposed to job availability or employer preference for older applicants. Although other conference participants will deal with specific problems of data collection and data validity I do want to cite several examples which help illustrate my point.

The bulk of youth-related employment data consists primarily of statistics noting the number of people in or out of the labor market, the number employed full time, part time, or unemployed. These same data are displayed in a manner which allows for comparison between white and nonwhite youth, youth of different age grouping, males and females,

and those who reside in urban as opposed to rural and suburban locations. With few exceptions there is a paucity of hard data dealing with the day-to-day business of how the young negotiate relationships between themselves and their neighborhoods, communities, and society. Nor, is there very much information available as to relationships between unfulfilled job aspirations or expectations and adjustment response. Obviously all youth do not hold similar aspirations and expectations and all youth will not react in the same manner to perceived or real barriers.

Yet even when data are available, there is serious question as to accuracy or meaning. For example, when a comparison is made of youth unemployment statistics, for a similar period of time, as presented by the Current Population Survey (CPS, upon which unemployment rates are based) and a National Longitudinal Survey (NLS) significant differences are apparent. Unemployment for in-school males, ages sixteen to seventeen was reported as 17.4% by NLS and 9.2% by CPS, a difference of some nine percent. For out of school males of the same age, there is a reversal with CPS citing a figure which is nine percent greater than that reported by NLS.[1]

There are other data deficiencies which contribute to the problem. Each year 400,000 people ages eighteen to twenty-four enter the armed forces. The military absorbs roughly a third of all non-college bound youth. Most are from lower income backgrounds and a disproportionate number are nonwhite. Information as to why these youth enroll in the military is lacking. Similarly, the extent to which the military experience enhances civilian employment opportunities is not known. Nor can we say very much about the reasons why large numbers of these youth (the estimates range from 30% to 40% for the Army and Navy) leave prior to completion of the first term of service. Given that the military is frequently viewed as a magnet for those who cannot or choose not to remain in the civilian realm, it would make sense to find out

1. Policy Options for the Teenage Unemployment Problem, Background Paper No. 13 (Washington: Congressional Budget Office, 1976), p.2.

what happens to them when they do leave the military.[1] Assuming that there is some positive relationship between policy and data, we would have to conclude that the military has determined that the major barrier to completion of the first term of service is age and a high school diploma. Current enrollment policies specify that an applicant must be at least eighteen years of age or if seventeen he or she must possess a high school diploma or its equivalency.[2] At the same time, it is interesting to point out that there are few officials in the military who would argue that a high school diploma is an assurance of academic competency or skill. For the most part, that particular credential is viewed as evidence of "stick-to-it-ness" (or as expressed by one official, "if a kid, especially a black kid, can stick it out through high school, we figure he can take most anything").

Data deficiences are also apparent when we seek to determine answers to even the most basic questions pertaining to school enrollment and school attrition. Although the emphasis is placed upon high school completion, we know there are numerous students who do not even get as far as secondary school. A number of investigators have pointed out that school enrollment and attrition rates are frequently inflated since in many states formula funding is based upon body counts. More important, perhaps, than enrollments, few studies have focused in upon the actual role of the school in contributing to student attrition and failure.[3] For the most part, high school dropout studies have sought to explain the problem by focusing upon the characteristics of the student, his family, and his community. Little differentiation is made between those who have chosen to leave and those who have been forced to leave. Nor is there much in the way of empirical consensus as to just what role the school does play in enhancing occupational mobility; responding to the needs of students who have experienced occupational

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2. First Term Enlisted Attrition. Vol. I: Papers (Washington: Navy Manpower R and D Program of the Office of Naval Research, 1977).

3. James McPartland, Edward L. McDill, et al., Student Participation in High School Decisions, Report No. 95. (Baltimore: Johns Hopkins Center for Social Organization of Schools, 1971), p.46.

barriers; nor what there is about education other than credentials which will influence how an employer will respond to a particular youthful applicant.

One style of adjustment to limited opportunities practiced by many disadvantaged youth has been enrollment in any one of a number of federally funded employment programs. Yet even in this case, conjecture and inference takes the upper hand over empirical data. No one can state with any degree of certainty just how many youth have been enrolled in the variety of programs, much less the number who successfully completed their training. We really do not know whether or not those who enter are representative of the most estranged of poor youth; whether they are like the majority of poor youth, or whether or not they are a very select slice of the most highly motivated of poor youth. I do know that the deck can be stacked and that in the early days of Job Corps we talked about selecting only the "cream of the crop" at least until we had achieved some acceptable level of program credibility. Aside from the selectivity question, there are serious data gaps with regard to why some youth enroll and others do not; why some remain while others depart; which program components are most likely to enhance job entry, stability, and mobility; what happens to those who leave the program; whether the critical variable is program treatment or maturity; whether those who participate in such programs do fare better than similar youth who were not program enrollees.

Youth in prison represent yet another adjustment response. Whether or not there is a positive relationship between unemployment and crime is a topic to be addressed by some other conference participant. I only seek here to make the point that youth in prison are yet one more important population for which we have little data. Whether or not the prison experience affects different youth in different ways is not a question which can be answered at this time. Nor is it possible to know the ways in which criminal and prison experiences influence employment-related behavior or problems of adjustment.

Joining with other critics, for whatever value it might be, it is appropriate once again to make the point that current methodologies utilized for the measurement of youth unemployment are not without serious limitations. To be included in the official definition of "unemployed" a person must be at least sixteen years of age, without a job, and available for and looking for work. An individual who works, however briefly, for wages during the survey week is considered "employed."

Thus, the definition of unemployment is arbitrary and it does not allow for the collecting of much information about each individual's work status or work situation. For example, a youth looking for full-time employment would not be cited as being unemployed if he or she held a part-time job of only one hour per week. Further, youth who are interested in work, but have stopped the search, for whatever the reason, are not included in the unemployment category since they are not viewed as labor force participants. The current system does not allow for a differentiation between those seeking full-time work and those seeking part-time employment. Moreover, as noted earlier, the discrepancies between NLS and CPS reports would indicate that we have yet to determine reliable sources for employment-related information.

Having been critical about the data gaps and methodological flaws, I feel compelled to say that I am not indifferent to the many problems involved in seeking out information from the young, particularly youth who are not readily accessible. The problem is further compounded by the fact that poor youth, more so than middle class youth, have difficulties in handling standard paper and pencil questionnaires and are probably somewhat more reluctant to share personal information.

The Job Corps experience can be illustrative of what can happen when the best of research-evaluation plans are tested out in the real world. Prior to the arrival of the first Job Corps enrollee an elaborate research and evaluation system had been designed and transmitted to appropriate Job Corps Center staff. Briefly, the plan called for the collection of entry data (why they came, how they heard about the program, what they expected to gain, and so forth) as well as a series of tests which would allow for some measurement of reading and math

skills. The plan called, also, for a mid-training interview and retest, and a final exit interview with a third educational achievement test. In order to be able to make comparisons between enrollees and nonenrollees, we contracted for an outside firm to give similar interviews and tests to a control population. Finally, in order to show the Congress that the payoff was well worth the investment, arrangements were made for a six and twelve month follow-up of both enrollees and control group members.

I believe it is accurate to say that within fifteen minutes of the arrival of the first group of enrollees, our research-evaluation system collapsed. First, we discovered that our commitment to science was not necessarily shared by front line staff. As articulated by one center director, "I have more to do than fuck around with your stupid-assed tests." Apparently this sentiment was shared by the majority of those who had responsibility for the implementation of our research format. Enrollees were equally unenthusiastic. Many complained that such tests were just school revisited and did not have anything to do with why they came to Job Corps. Still others resented the kinds of questions which were being asked and many were more than a little apprehensive as to just how the information would be utilized. I should also point out that more than a few of the enrollees had already had wide experience with such data-collecting techniques and tests and hence were quick to note that such data were, in fact, biased. Yet another barrier to successful implementation was the fact that some enrollees arrived, took one quick look at their home to be, and promptly demanded to be returned whence they came. Needless to say, the situation seemed hardly appropriate for the pursuit of respondent based data. In any event, the mix of enrollee resistance, staff indifference, and the realities of the setting was sufficient to bring our research efforts to a virtual halt. Our outside contractor did not fare much better in attempts to assemble and study the control groups. Problems of respondent resistance mobility as well as a fear on the part of interviewers to enter certain neighborhoods all contributed to a moratorium on such ambitious research undertakings.

I recognize also that research is a costly business; that there is only so much time which can be devoted to an individual interview and hence, not all good questions can be included; that there is a growing reluctance on the part of people to participate in survey as well as other studies; and that the processes of research entry are becoming all the more difficult because of emerging freedom of information and privacy protection regulations. At the same time, I do believe that the barriers are not insurmountable and that we can do a better job in the selection of questions, the pretesting and validation of research instruments; greater eclecticism in research methodologies (a better mix between in-depth interviews and surveys); more effective use of youth as data collectors; being more sensitive to the apprehensions felt by respondents and doing more to show respondents as well as policy makers the necessity, relevance, and functional value of our research; more in the way of collaborative efforts among the various social science disciplines in both the design and analysis stages of the research; and finally, a more humble posture as we attempt to bridge the gap between our data and the problems of the real world.

I noted earlier that an important part of my assignement here is to say something about alienation as a characteristic of poor youth or as a youthful response to perceived or real barriers to opportunity. Alienation is a term frequently utilized by behavioral scientists, particularly sociologists. It is a term that implies feelings of powerlessness, anonymity, estrangement, or a lack of some acceptable relationship between the individual and the institutions of the society. It is also a term which seems to be utilized in a most cavalier manner. Alienation is used as both an independent and dependent variable. Some investigators take the position that alienation contributes to failure or underachievement in academic studies, interpersonal relationships, employment, and a host of other behavioral areas. Conversely, other social scientists view alientation as being the result of failures in academic achievement, interpersonal skills, and employment goal attainment. Most sociologists and psychologists agree that there is a significant relationship between self-esteem and expressed sentiments of alienation. Disagreement arises over the question of which of the two is the contributing variable.

The term alienation has been used to explain the behavior of student activists, the women's liberation movement, past and most recent black disruptions in urban areas, juvenile and adult delinquency, and the shift to alternative life styles. It is a very popular variable or concept. A systematic review of the utilization of the term alienation would suggest that it is probably more a product of the sociological imagination than an accurate reflection of why some people behave the way they do. Whether or not alienation, no matter the criteria utilized, flows from limited prospects is not a question which can be answered fully by available data. It is true that sociologists do find a positive relationship between socio-economic status and admissions of personal powerlessness. At the same time, the research at hand would indicate that numerous other variables can and do intervene to distort this relationship. For example, Rosenberg notes that factors such as age, sex, race, and the racial composition of a school will influence how students of varying socio-economic backgrounds view themselves and their abilities to control their destinies.[4]

I do not mean to suggest that feelings of alienation are unimportant or that they are not unrelated to blocked opportunities. Rather, I am taking the position that at this point at least, we cannot say very much about the interplay between alienation and response to limited prospects. Further, there is little reason to believe that alienation is more characteristic of youth than of other age and social groups or that it is more prevalent among poor youth than among more affluent youth. Some would argue that limited prospects would, in fact generate greater adjustment problems for the middle class rather than lower class young simply because more affluent youth hold higher expectations and are under greater social pressure to achieve. What we can say is that there is a real need to learn more about the various coping methods utilized by youth, rich and poor, if our intent is better to understand both the role and consequences of limited opportunities.

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4. Morris Rosenberg, "The Dissonant Context and the Adolescent Self-Concept" in Sigmund E. Dragastin and Glen H. Elder, Jr., eds., Adolescence in the Life Cycle (Washington, D.C.: Hemisphere, 1975), pp. 97-116.

The war on poverty, while calling national attention to the condition of the poor, also acted as a stimulus for the publication of numerous reports, monographs, texts, and public commentaries all seeking to provide a realistic portrait of poor youth. In reviewing these materials, one can only be struck by the paucity of data. Without the benefit of comparative samples, samples of sufficient size, control for such critical variables as age, sex, race, and community, precise definitions of poverty or disadvantaged, or any data reflecting respondent attitudes, values, experiences, or needs sweeping generalizations were made and poor youth became a monolith. "You see one poor kid and you've seen them all." Rather than viewing poor youth within the usual framework of the adolescent-youth development process, poor youth were portrayed as products of some separate and distinct culture.

Two incidents from the early days of Job Corps might help illustrate my point. Early in 1965, Job Corps administrators thought it would be wise politically to bring a small group of Job Corps enrollees to Washington, the idea being to give Congressional representatives an opportunity to observe first hand the results of their congressional actions. The plan was to assign these enrollees to various federal agencies and congressional offices. Needless to say, great care was given to the selection of this group of Job Corps members. Upon their arrival in Washington, each of the enrollees was briefed and provided with the Job Corps dress uniform: gray slacks, blue blazer (with Job Corps insignia), blue, button-down shirt, pin strip tie, and black loafers. Beneath the uniform they might have been poor, but clothes do make the man. The reaction should have been predictable. Congressman Flood of Pennsylvania took one look and accused us of not fulfilling our mandate. More than a few OEO employees would not accept the fact that these were Job Corps enrollees and not ringers. The director of Job Corps held a similar view: these kids did not fit the tragic image we had painted for the Congress and, hence, their middle class appearance would be dysfunctional to the cause.

My second example held more serious implications for both enrollees and the Job Corps program. Having been one of the principals in the

design and implementation of the Job Corps, I am compelled to admit that we did fail to differentiate between our public rhetoric and the realities of the situation. In a desire to explain away high attrition rates, center disturbances, failure to achieve enrollee quotas, and to persuade Congress of the difficulties of our task, we did much to contribute to the image of enrollees as alienated, hostile, emotionally distressed, and deficient in even the most basic of cognitive and interpersonal skills. Certainly, the Job Corps enrollees were, in comparison to middle class youth, less accomplished in intellectual skills, more likely not to have completed high school, more likely to be from disorganized families, more likely to have been involved in acts of delinquency, and more likely to have experienced prolonged periods of unemployment. We could not have expected otherwise since the attributes noted were supposed to be characteristic of those admitted to the Job Corps. Relative differences were not really taken into consideration. The strengths and motivations of enrollees were underplayed. Rather, the prevalent theme in many centers was to stress the emotional and attitudinal dimension while sacrificing relevant job skill training and the building of bridges between the enrollee and specific employment and job opportunities. The emphasis upon the minds, heads, and internal dynamics of enrollees did little to enhance job skills or post-training job placement. Further, I would think that this eclectic approach did help to stimulate attrition and discontent since many enrollees failed to see any relevant relationship between their expectations for job training and job placement and the day-to-day activities within Job Corps centers.

As Taggart points out, it was only when Job Corps began to take its legislated mission seriously that significant changes did occur:

> Second, overall Job Corps performance improved rather than deteriorated when many of the frills were slashed. Training and education were narrowed to specific job requirements. The key seemed to be the ability to gain access

to better jobs rather than the efforts to alter the attitudes and values of enrollees.[5]

There is yet another lesson which can be learned from the Job Corps experience, and one that too many in policy, research, and program positions are reluctant to confront. In matters of youth employment training and formal schooling, much too much of the burden of proof has been placed upon the client, student, or trainee and too little attention has been given to those institutions responsible for the design of work settings; those responsible for increasing work opportunities; those responsible for the absorption and integration of newcomers into the work force. Obviously, in the business of education and work, it takes two to tango: people who are prepared to handle work responsibilities and institutions dedicated to maximizing work and career fulfillment. My own assessment of the education-work picture leads me to conclude that current youth employment training policies and programs reflect either naiveté or a deliberate avoidance of data-based reality: naive in behaving as if proper skill training and an assertive work attitude alone will lead to productive and satisfying employment: unfair in implying that the major problem is with people, young or older, who are either unwilling or unable to take on reasonable work or non-dead end employment. Indifference to the hard facts of shrinking job opportunities; increased competition in job entry; a reluctance on the part of employers to hire the young, particularly those who have not completed high school and those who are black, and indifference to the fact that most of the jobs available to poor youth, particularly those who have not completed high school and those who are not white, do not require much in the way of skill training and do not represent an opportunity for career stability and even less in the way of job satisfaction.

Without unduly belaboring the obvious, or going too far afield of my assignment, I want to make the point again that if our concern is with minimizing youthful alienation and problems of adjustment to lim-

5. Robert Taggart, "Employment and Training Programs for Youth" in National Commission for Manpower Policy, From School to Work: Improving the Transition (Washington: Government Printing Office, 1976), p.121.

ited opportunities, we would be wise, I believe to consider the commentary of Sar Levitan:

> Excepting a minority of youths who need special assistance to find and retain jobs, it would seem that all the help most teenagers needed to function effectively in the work force was enough jobs to go around. In labor markets with large job deficits, it's only to be expected that the inexperienced will be shoved to the end of the line and some will give up completely. My prescription for the day is that the best way to reduce unemployment--for youth as well as adults--is to create jobs.[6]

While I would concur with Levitan, I would add that in the case of the young, particularly poor youth, it is necessary to be somewhat more precise as to the kinds of jobs we have in mind.

Barton and his associates have conducted a variety of analysis which would confirm the existence of two labor markets--one for the young and one for adults.

> Teenage employment is different, even for those working full time, and even when they have been certified with a high school diploma. To make the point a distinction will be made between "youth jobs" and "adult jobs" or "regular jobs." It is not a precise one, and all jobs cannot be neatly placed into one category or the other. But roughly speaking the distinction exists, and it is important to recognize it.[7]

In pursuit of evidence to support the proposition that age is a critical factor and perhaps, especially among adolescents, of greater significance than a high school diploma or certified skill training, Barton reveals a number of provocative findings.

Utilizing special data from the Bureau of Labor Statistics, he is

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6. Sar A. Levitan, "Coping With Teenage Unemployment" in National Commission for Manpower Policy, The Teenage Unemployment Problem: What Are the Options? (Washington: Government Printing Office, 1976), p.64.

7. Paul E. Barton, "Youth Employment and Career Entry" in Seymour L. Wolfbein, ed., Labor Market Information for Youths (Philadelphia: Temple University 1975), p.85.

able to show that when comparisons are made of male high school graduates employed in 1969, of those ages eighteen and nineteen, 58% were operatives or non-farm laborers. For the age range of twenty-five to forty-four of the same educational level, only 27% were in these occupations. Further, a comparison of a wider range of occupational groupings shows that among males of the same age, eighteen and nineteen, no significant differences are found in occupational distribution when comparisons are made between high school and non-high school graduates.

Reports published by the University of Michigan Survey Center reflect similar findings. The research, starting 1966, involved a national panel of 2,000 boys at that time in the tenth grade. The findings summarized below were based upon the 1970 survey.[8]

(A) Mean weekly earning for graduates was $112.00 compared to $119.00 for dropouts.
(B) Graduates were found to have a slim edge in occupational status, although not statistically significant.
(C) In response to the question, "What I have learned in high school helps me to do a better job," 13% of the dropouts answered very true, compared with 16% of the graduates.

Other data, including a Bureau of Labor statistics survey of the hiring practices of firms in ten communities provides some revealing findings. For nonoffice occupations, the percent of firms not hiring people under age twenty ranged from a low of 48% to a high of 76%. For office occupations the youth barriers were less severe reflecting the fact that young women with high school diplomas can move fairly quickly into clerical work.[9]

The findings presented above, available follow-up data from employment training programs, and the rather extensive investigation conducted by Kalachek suggest that the failure of youth to be employed is not necessarily the result of either holding or not holding a high school diploma; secondly, failure of youth to be employed may be more the result of restrictive and arbitrary hiring policies than the result of a lack

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8. Jerald Bachman, et al., Youth in Transition, vol. 3 (Ann Arbor: Survey Research Center, University of Michigan, 1971).

9. Ba[illegible]on, op. cit., p.91.

of necessary motivation or skills;[10] further, that one consequence of this restricted and distinct youth job market combined with the increase in women in the labor force and the extension of the retirement age will be more and more youth competing for fewer and fewer jobs. More than one analyst has noted that without expansion of the job market and a critical examination of the current criteria utilized in the decision to hire or reject youth we will continue to experience significant youth unemployment; increased competition among youth for fewer and fewer "regular jobs"; and a hardening of those barriers which currently operate to separate the young, particularly those with the fewest bargaining resources, from entry into even those occupations which are considered as being an appropriate career starting point for the young.

Knowing the unemployment rate for youth does not tell us very much about how the young feel or deal with unemployment. Again, the available national or large scale inquiries do not provide answers as to the behaviors, problems, attitudes, or consequences of youth employment or unemployment.

Much of the attitudinal research focusing upon youth is most often restricted to the presentation of marginals. There is limited multivariate analysis, a failure to differentiate between age, SES, sex, and racial groupings. We know much more about those in college than those who are not students, more about males than females, more about the affluent than the poor, more about whites than nonwhites.

Still, there are a mixture of investigations which allow for comparisons between youth of varying SES, educational, and racial backgrounds. There are also several field studies which seek to describe the milieu and life style of the disadvantaged. Finally, there are studies which do provide some insights as to the factors which appear to be associated with variations in employment and educational achievement among poor youth.

Whatever the source of data, it is clear that contrasts in the achievement status of youth of different socio-economic backgrounds

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10. Edward Kalachek, The Youth Labor Market (The University of Michigan and the National Manpower Task Force, 1969).

is more the result of societal and resource constraints than significant differences in attitudes, values, or aspirations.

An American Council of Education research report entitled "Low Income Students: Do They Differ from 'Typical' Undergraduates?" concludes with the following statement:

> The implications of the present study are clear. Aside from the expected dissimilarities in their demographic and background characteristics (e.g. father's occupation), the low income undergraduate does not differ dramatically from his more affluent classmates. He shares with them the same life goals, degree aspirations, activities, and interests. He may be more likely to drop out--but only temporarily; he may shy away from student deomonstrations; he may get slightly lower grades; but overall, the likelihood of his attaining his degree in four years is reasonably close to that of his more privileged classmates.[11]

Similarily, a national survey conducted by Yankelovich in 1969 shows that with few exceptions, college and noncollege youth are not very different in expressed attitudes, values, and beliefs.[12] If anything, noncollege youth tend to be more traditional in responses, placing greater stress on the importance of law and order, a hawkish approach to View Nam, and respect for their elders. Noncollege youth, more so than those in college, emphasize the importance of "having the love and respect of your family" and "living the good Christian life." Finally, with regard to work-career related attitudes, noncollege respondents are more likely to believe that "hard work will always pay off if you have faith in yourself and stick to it"; "hard work keeps people from loafing and getting into trouble"; and "the individual who plans ahead can look forward to success and achievement of personal goals."

My own study of the work aspirations and expectations of graduating

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11. Enign I. Holmstrom, "Low Income Students: Do They Differ from "Typical" Undergraduates?" research report (Washington, D.C.: American Council of Education, 1973), pp.19-20.

12. Daniel Yankelovich, "What They Believe," Fortune Magazine, (June, 1969) pp.70-71.

college seniors reflects minimal variations between white and nonwhite students. Major contrasts are found in postcollege degree plans and field of study. As might be expected, nonwhite graduates are confined to fewer fields of study and are more likely not to plan on enrolling in graduate or professional school immediately following college graduation.[13]

A 1966 study of some 1,300 male Job Corps enrollees provides both attitudinal and enrollee background data.[14] The typical enrollee had completed nine years of formal education at the time of entrance into the program. Reading sources indicate a 6.7 grade level; 63% had no previous record of any type of delinquent behavior, 27% had committed minor acts of antisocial behavior and 10% had been convicted of more serious offenses. Less than a fourth had contact with a doctor or dentist during a four year period prior to Job Corps enrollment. Only 10% had been employed in full-time jobs during the one year period preceding enrollment and this working group earned less than eighty cents per hour.

Comparisons of white and black enrollees indicate both differences and similarities. When asked to rank the importance of certain job and work characteristics, the great majority (90%) of both racial groups agreed that "if you work hard you can get ahead." Generally, black enrollees were more likely to have come from single parent homes, with parents having completed fewer years of formal schooling and with parents who have experienced longer periods of nonemployment. Significant differences were found in matters of preferred work settings and work styles. Blacks much more so than whites showed a preference for indoor jobs, jobs where you have an opportunity to "use your own ideas." However, the majority of enrollees, white and black, agreed that education and hard work were the critical factors in allowing a person to

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13. David Gottlieb. Youth and the Meaning of Work (Washington: Government Printing Office, 1974).

14. David Gottlieb, "Poor Youth Do Want to Be Middle Class, But It's Not Easy," Personnel and Guidance Journal, vol. 15 (October 1967), pp.116-22.

"get ahead." Further, white and nonwhite enrollees were in agreement that for the most part, parents and teachers were supportive and desirous of enhancing enrollee success. At the same time, less than a fifth of all enrollees felt that there was a high degree of consensus between their cover aspirations and the activities or requirements of the schools in which they were enrolled.

Utilizing employment status as an indicator of successful transition from school to work would give the impression that for most youth time alone will heal all problems associated with unemployment. That is, if the young can just hang in there long enough and avoid the detrimental consequences of prolonged detachment from school and employment, then eventually the majority will somehow be absorbed and integrated into the socially acceptable workings of the system. Again, we can say little about the emotional, social or economic damage caused by prolonged periods of isolation from school, work, or training program. Nor, as noted earlier, can we assume that involvement with school, work or training implies that all is well with the young.

From the available data, it seems safe to conclude that the vast majority (97% in 1971) of fourteen- to sixteen-year-old males are enrolled in school. About a fourth of those in school are working, mostly part time. The major shift to work occurs around the age of seventeen and is largely completed by age twenty-four or twenty-five, with more than 85% of the youth at that age out of school and more than 90% of those out of school working or serving in the armed forces.

Young women follow a similar pattern except in that they show a tendency to terminate schooling at a somewhat faster rate after age sixteen. There has, however, been a leveling off and the gap between males and females is rapidly declining with increases in female college and postcollege enrollment and marked increases in labor force participation.

Disadvantaged youth are among those most likely to experience barriers in the normal or usual transition process. In general, hard-to-employ youth are defined as members of a minority group, not regular members of the labor force, urban dwellers, with less than a secondary school education, and of very low socio-economic backgrounds.

An analysis of historical trends in youth unemployment makes clear that it is the black population which is least likely to become connected with employment. As Regis H. Walther concluded in his extensive review of youth employment studies:

> The labor market problems of black youth are matters of particular concern because of the size of the black population (about 13% of the youth population), the long history of overt discrimination, and the severity of their labor market problems. Black youth do worse than white youth in every age, sex, and education achievement category, except perhaps for college graduates.
>
> A look at the long term trends indicates that the situation has been steadily deteriorating for a number of years. Twenty years ago, non-white and white males within the same age bracket of 16-19 had roughly comparable participation and unemployment rates. Non-white females had a significantly higher unemployment rate than white females in 1954, but the gap has been steadily widening in the intervening years. In 1975 the unemployment rate for out-of-school 16-17 year old non-whites exceeded 60%. This exceptionally high rate was partly a result of the economic down-turn during 1975, but in the previous year when conditions were not as bad, it had reached 50%.[15]

Walther also identifies a number of factors which others have proposed as being of critical importance in differentiating between "hard to employ youth" who either succeed or fail in employment training programs.[16]

Birthplace: Higher retention for those from the South as compared to those from the urban North.

Marital Status: Married youth perform better than unmarried youth. Obviously an important intervening variable with those between the ages of sixteen to eighteen showing less program commitment than is the case for older youth.

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15. Regis H. Walther, "Analysis and Synthesis of DOL Experience in Youth Transition to Work Programs," 1976 report available from National Technical Information Service, VA 22151, p.47.

16. Ibid, pp.53-56.

Test Scores:	Scores on IQ and reading achievement tests are positively associated with good performance.
Family Background:	Youth from two-parent families not on welfare do better than those who are products of familial disorganization and those who come from mother-headed welfare families.
Family Atmosphere:	Parental punitiveness and lack of support are highly associated with program failure.
School Activities:	The more successful enrollees are those who did well in school, completed more years of schooling, and were not classified as disciplinary problems.
Contact with Police:	Poor performers were more likely to have delinquency records.
Previous Work Record:	Good performers have better work records and are less likely to have experienced prolonged periods of unemployment.
Role Models:	Identification with positive role models is more characteristic of those who perform well than of those who leave the program prior to completion.
Optimism:	Good performers express a more positive attitude and a greater self-confidence.
Socialized Values:	Belief in education and hard work are considered important ingredients for successful performance.
Trust:	Good performers are more trusting of others.
Personal Competence:	Past successful achievement in school or work is more characteristic of good performers.
Self Evaluation:	The more positive the self evaluation the better the performance.
Staff Evaluation:	Those ranked most highly at time of program entrance were later judged to be better performers.
Planning Ahead:	Better performers have better crystalized personal goals and plans.

Peers: Performance is associated with involvement with and dependency upon peers and the nature of the peer group. Good performers are less dependent upon peers and less likely to be involved with peers engaged in antisocial behavior.

With regard to the Walther listing, several observations are in order. First, whether the population be poor or rich, male or female, black or white and whether the setting be school, work, or training program, these same variables typically emerge as being of critical importance. Second, measurements of success leave a great deal to be desired. For the most part the dependent variable is program completion and attrition. Those who complete the program are labeled as good performers, those who leave are classified as poor performers. Third, it is difficult, if not impossible, to determine which are the independent and which are the dependent variables. Is good performance a product of high esteem or does high self-esteem generate good performance? No doubt there is some mutual variable interaction, but these studies fail to define just what factors, in just what settings, with just what kinds of youth, will predict or explain good or poor performance.

Throughout this paper I have attempted to speak to the question of alienation and adjustment to limited prospects as experienced by disadvantaged youth. As indicated throughout the body of this paper there is, in fact, little in the way of reliable or empirical data which would shed much light on the subject. I have also sought to identify areas of inquiry which should be pursued if there is serious interest in knowing the ways in which youth, particularly poor youth, respond and adjust to perceived barriers. Further, there is a need to study the ways in which current hiring policies act to block youth from employment.

It is my hope that through the combination of in-depth personal interviews, ethnographic field research, and validated survey instruments, we will, in the future, be able to provide answers to the many important questions being raised in this conference.

DO YOUTH REALLY WANT TO WORK: A COMPARISON OF THE WORK VALUES AND JOB PERCEPTIONS OF YOUNGER AND OLDER MEN

By Patricia Y. Miller and William Simon

ABSTRACT

Recognizing the dearth of available research on the work values of youth, the paper examines these using data drawn from a random sample of 1992 men between the ages of eighteen and forty-nine. A varimax factor analysis of twenty-seven items concerning work values produces six factors: Intrinsic Work Rewards, Economic Rewards, Security Rewards, Social Rewards, Interpersonal Rewards, and the Antiwork Ethic. Considering only men whose annual incomes were less than $15,000, small but significant differences are found between younger and older men with reference to the value attached to Economic Rewards, Security Rewards and the Antiwork Ethic. Examination of a comparable set of items concerning worker perceptions of access to these rewards indicates that older men consistently and, sometimes, substantially report greater satisfaction in their present jobs in terms of these. Unemployment is not associated with work values. Ethnic minorities appear to undervalue Intrinsic Work Rewards and overvalue Economic Rewards, Security Rewards and the Antiwork Ethic. The analysis concludes that substantial continuity characterizes the work values of younger and older men.

INTRODUCTION

All too often, the major source of specific policy problems is to be found in the unanticipated consequences of otherwise effective improvements in the system of social arrangements that obtain in one or another sector of the society. Thus, improved law enforcement frequently appears to exacerbate the crime "problem," improved health care delivery systems create an elderly citizen "problem" and industrial innovations compound the unemployment "problem." Characteristically, those in the "helping professions," particularly in advanced western societies, experience enormous frustration in their efforts to improve the lot of such groups. These frustrations give rise to the impulse to blame the victim, to stress hypothetical explanations that locate the source of the "problem" in the real or imagined characteristics of the client. A predictable feature in the evolution of virtually every

social problem is the evolution of at least one explanation emphasizing the complicity of the individual in his or her own difficulties.[1]

With reference to unemployment, Kalachek has observed that rising unemployment is accompanied by increased cynicism toward the unemployed, as critics mobilize skepticism about their sincerity in seeking jobs or their willingness actually to work.[2] The most recent expressions of such cynicism are profitably considered against the backdrop of the late 1960s.

During these years, the conjunction of industrial expansion, a wartime economy and federal programs directed toward the hard-core unemployed provided an abundance of entry level employment opportunities for the young, particularly those with college training. As the intellectual founders of the social sciences would have predicted, the expectations of many young people, assured of their "right" to work, escallated to encompass other, in this case moral, concerns. They said they wanted jobs that were intrinsically interesting and socially responsible. A good wage and the promise of career advancement opportunities were no longer sufficient in themselves to attract an adequate number of youth to certain kinds of jobs or specific industries.

These rising expectations asserted by the young caused speculation that a radical disjuncture had occured in the work values of some Americans corresponding to or in consequence of their political opposition to American foreign and domestic policy in general and the unpopular war in Viet Nam in particular. More judicious observers suggested that a long-term transformation in the ethics of work accounted for the emergence of social responsibility as a pivotal value.[3]

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1. In circumstances where blaming the victim is impractical due to the intensity of popular sentiment; responsibility for the problem may be directed toward a surrogate chosen from among those in proximity to the actual victim, e.g., kin.

2. Edward Kalachek, The Youth Labor Market (University of Michigan and the National Manpower Task Force, 1969). pp. 72-73.

3. Jacob W. Getzels, "On the Transformation of Values: A Decade After Port Huron," School Review, vol. 80 (August 1972); pp. 505-19.

Some argued that the assimilation of this generation and its emphasis on social responsibility into the labor force would profoundly alter the character of work as well as the moral context in which economic activity occurs. (How remote all at once appears the warning of a "youth revolution," how distant the point of a demographic accident that gave us "half the population under twenty-five," as if that marked some cultural watershed.) Less optimistically, others suggested that the rising expectations of youth with reference to work presaged a diminished commitment to work itself in the maturing cohort, that their posture towards work promised unwholesome consequences for both industry and the economy.

A subsequent scarcity of employment opportunities in the intervening years fostered, we are told, a growing preoccupation among the young with the availability and security of employment. With scarcity, the mechanisms of relative deprivation generating rising expectations moved into reverse and the chorus of concern for intrinsic rewards and social responsibility in the job setting was substantially muted. The legacy of the 1960s, however, is a lingering suspicion that the present difficulties youth experience in acquiring and maintaining employment are somehow conditioned by flaws in their work values which render the[illegible]or candidates for full participation in the labor force. It is certainly recognized that contemporary youth are disadvantaged by a[illegible]omy that can provide them with fewer jobs than they need and a dual labor market that decidedly favors the educated, trained and experienced workers in the high caste or primary sector. Nevertheless, underlying these objective obstacles to youth's adjustments to work is the suggestion that the young are further disadvantaged with regard to employment by unrealistic expectations concerning the content and rewards of participation in the labor force.

Curiously, these enormous swings alleged in the work values of youth left few empirical residues. From the perspective of the theory testing that organizes "normal science," the paucity of research on the work values of youth is not particularly surpris[illegible]. While such

values are potentially important from a practical perspective, they fall into the interstices of the theoretical concerns that dominate research on this population. Particularly marked is the neglect of those whose entry into the labor force (a) occurs earliest, and (b) without benefit of the services of some protective institution. We can only speculate about the factors that account for the disinterest in these youth apparent among those responsible for policy.

The handful of extant studies provides very limited data from which to evaluate the stability of work values across cohorts of youth. Somewhat more research is available for college students. Davis' classic study stresses the salience of intrinsic work rewards for a sample of college students in the 1960s.[4] Compared to such factors as money, career advancement and opportunities for the exercise of leadership, these students cited opportunities to be helpful to others and useful to society, or to be creative and original, substantially more often. By the late 1960s Yankelovich had distinguished "forerunners" from "practical minded" college students. The former disproportionately stressed the altruistic and instrinsic aspects of work; the "practical minded" were somewhat more likely to value job security, income and prestige.[5] Studying college seniors in the 1970s, Gottlieb similarly found that they emphasized the altruistic or social responsibility component of work as well as its intrinsic rewards. Moreover, he observed that they place less importance on money, prestige and status compared to the students interviewed by Davis about ten years earlier. Interestingly, the values of these seniors varied markedly according to their fields of study. Thus, for example, men in business administration and engineering were more likely to view work pre-

4. James A. Davis, Great Aspirations (Chicago: Aldine Publishing Company, 1964).

5. Daniel Yankelovich, "What They Believe," Fortune, vol. 79 (January 1969), pp. 70-71; 179-181.

dominately as a means to make money while men in agriculture disproportionately believed that work provides a means for becoming a better person.[6]

In a follow-up study one year later, these college seniors reported on their early experiences in the world of work. Among those working, the "most important reasons" cited for taking their current jobs were "interest in job" (33% of the males, 40% of the females) and "needed money to live" (26% of the males, 27% of the females). Moreover, half reported that they were earning less than they had expected to before they entered the labor force. While a substantial number appear to have experienced the economic realities of work as somewhat harsh, the majority found intrinsic and altruistic work rewards accessible to them.[7]

Our review of the limited research available on the work values of college students in recent years suggests that their values have remained fairly stable. Nevertheless, the work of both Gottlieb and Yankelovich indicates that there is considerable heterogeneity in values among students which corresponds to their orientations toward the interface between education and career. Further research on the development and maintenance of work values and the ways in which these are translated into educational endeavors and career plans would appear to be indicated.

Research related to the work experience of nonstudents is particularly sketchy. Studies are available to confirm common-sense assumptions regarding the impact of education, work experience, race, gender and levels of occupational information on objective indicators of work adjustment such as earnings, unemployment experience and occupational status.[8] Additional research documents the particular prob-

6. David Gottlieb, Youth and the Meaning of Work (Washington: U.S. Department of Labor, 1974).

7. David Gottlieb, Youth and the Meaning of Work, Part II (Houston: The University of Houston, 1974).

8. Herbert S. Parnes and Andrew I. Kohen, "Labor Market Experience of Noncollege Youth: A Longitudinal Analysis," in From School to Work: Improving the Transition (Washington: Government Printing Office, 1976), pp. 57-88.

lems experienced by low-income ethnic minorities with respect to employment.[9] Very little is known about the social-psychological dimension of work for noncollege youth.

Not surprisingly, the handful of available studies suggest that the work values of noncollege youth differ substantially from those of young men and women attending college. Based on the Yankelovich data, noncollege youth are less likely to emphasize altruistic and intrinsic work values. Moreover, compared to the "forerunners" among college students, substantially greater numbers of noncollege youth stress the importance of money and prestige. In fact, the value attached to money and prestige by noncollege students is comparable to that of "practical minded" college students.[10] Similarly, practical concerns, such as job security, wages and opportunities appear prominently in the job concerns of high school students.[11] A British study of early entrants into the labor force suggests that intrinsic factors and, secondarily, practical concerns impact on job satisfaction.[12] And Gottlieb concludes that the work values held by Job Corps participants are essentially middle class.[13]

It appears, then, that the work values of noncollege youth are not radically dissimilar to those of college youth. The meaningfulness of work is a high priority for both groups, but less so for those not attending college. Practical concerns for job security, salary and opportunities for advancement are secondary to a concern for meaningful, satisfying work activity for both groups, but such practical con-

9. Paul Bullock, Aspiration Vs. Opportunity: "Careers" in the Inner City (Ann Arbor: Institute of Labor and Industrial Relations, 1973).
10. Yankelovich, op. cit.
11. A.C. Erlick and A.R. Starry, Vocational Plans and Preferences of Adolescents, Poll 94 (West Lafayette, Ind.: Purdue University, 1972).
12. Joan Maizels, Adolescent Needs and the Transition from School to Work (London: The Athlone Press, 1970), p. 256.
13. David Gottlieb, "Poor Youth Do Want to be Middle Class, But It's Not Easy," Personnel and Guidance Journal, vol. 15 (October 1967), pp. 116-22.

cerns are more prominent among noncollege youth.

As we indicated earlier, the mechanisms of relative deprivation naturally function to escalate expectations where basic needs are predictably secure. Thus, the work values of Gottlieb's college seniors--who believed that their salary requirements would be easily satisfied--emphasized intrinsic and altruistic work factors. Noncollege youth, we can be sure, are less secure in the belief that their basic needs or practical requirements will be satisfied and the contrast between intrinsic and economic values is less striking for them compared to college students.

The critical question of continuity in work values remains. While some young people undoubtedly have difficulty adjusting to employment because their expectations are unrealistic, it is not clear whether the difficulties of contemporary youth with reference to entry into the labor force can be traced to the values of this cohort. To answer this question requires the comparison of values held by youth in the labor force with those of older men who claim essentially similar occupational niches. As the classic study, The American Soldier demonstrates, it is the "veterans" who create the context within which neophytes experience and evaluate their own responsibilities.[14] This wisdom is reinforced with reference to work orientations by Coleman, who argues against the ghettoization of youth, citing the role of established workers in the occupational socialization of the young.[15] We must also avoid the impulse to ghettoize youth in our research efforts; it is to the established worker that we must look for the standard by which to judge the neophyte. For this reason, we have self-consciously chosen to focus exclusively on noncollege youth and their older counterparts in the analysis of work values we have undertaken.

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14. S.A. Stouffer, A.A. Lumsdaine, R.M. Williams, Jr., M.B. Smith, I.L. Janis, S.A. Star, and L.S. Cottrell, Jr., The American Soldier: Combat and Its Aftermath (Princeton: Princeton University Press, 1949).

15. James S. Coleman, et.al., Youth Transition to Adulthood (Chicago: University of Chicago Press, 1974), pp.132-33.

The work values of college youth are certainly important and should be pursued for this data set, but time-cost-space considerations dictate a narrower focus here. More critically, we believe our decision enables us to contribute a perspective that is presently unavailable in the literature.

In passing, we would like to observe that values are not fixed attributes. They are dynamic in response to the characteristics of specific situations. Rich rewards would undoubtedly flow from the research effort to trace the shifts in values that occur with entry into the labor force and the concrete work experiences that follow. We would expect the expressed values of workers to reflect a compromise between their ideal values and their perceptions of their own access to specific work rewards as well as the climates of value that describe their work worlds at any given time. Moreover, shifts in work values occur in response to changes in other, nonwork-related sectors of the individual's life. Contemporary changes in family values and family formation behavior, while beyond the scope of this analysis, are undoubtedly reverberating into the world of work in as yet unknown ways.

Our evaluation of the work values of young men is based on the secondary analysis of interview data collected during 1976-77 from a national random sample of 1992 men. The sample was restricted to those between the ages of eighteen and forty-nine but included men living both in households and on college campuses. Compared to the 1970 Census, the demographic characteristics of the sample with respect to age, race, occupational status, income and education are within the normal range of sampling error.

Since our particular concern is with the work values and job perceptions of youth actually in the full-time labor force, the 318 students who fell into the sample have been excluded from this analysis. In addition to the students, fifteen men who were serving in the military were also excluded here as well as fifteen additional cases where the respondent was handicapped or otherwise disqualified.

Certain common sense predictions can be made with considerable assurance about the objective and subjective present and future experi-

ences of contemporary young men with limited education. They enter the labor force in marginal, unskilled or minimally skilled occupations. They earn modest wages, somewhat higher than the legal minimal wage. Initially, they experience higher unemployment and interfirm mobility than virtually any other group of men. In time, their labor force participation stabilizes as they move into the skilled or semiskilled trades or the lower-middle levels of white collar technical and clerical occupations. While the high earning potential of some of the blue-collar trades in recent years has become legend, the majority of such men will continue to earn substantially less than their college educated counterparts. Although clearly sharing many values with their fellow Americans, their lifestyles and values will remain somewhat distinctive.

The recognition that such men possess a distinctive constellation of political and economic values and, additionally, occupy a specific structural location in American society persuades us that a gross comparison of younger with older workers would be confounded by cohort effects that favor the older worker with minimal schooling. We are, of course, interested in comparing recent entrants into the labor force with established workers. For the comparison to be meaningful, however, some assurance is required that any observed differences are due to age and its correlates rather than to extraneous uncontrolled variables.

Education is one such variable that is particularly troublesome. The number of men completing secondary and post-secondary education has increased steadily over the years since World War II when the oldest men in this study entered the labor force. Accompanying the proliferation of higher education has been sporadic changes in the meaning of specific educational achievements for occupational mobility. For this reason, the analysis will be restricted to men whose annual incomes during 1975 were less than $15,000, on the assumption that income rather than education, occupation or some combination of these provides the best available marker of restricted occupational achievement. This resulted in dropping a total of 460 cases; the

preponderance of these were men over thirty who accounted for 345 of the excluded respondents. There remain substantial differences in annual income that correspond with age--the zero-order correlation (r) between age and income is .286. The median income for men between eighteen and twenty-two is $4,953; for men between twenty-three and twenty-nine the median increases to $7,337 and finally reaches $10,187 for men aged thirty to forty-nine.

Nevertheless, the exclusion of these cases did result in greater homogeneity across age with respect to the dependent variables. The reader should be advised, however, that the substantive conclusions of the present analysis were sustained in a parallel analysis of data for the entire sample exclusive of students.

Respondents were asked to answer more than 400 questions concerning their family, political, economic and leisure activities and values. Included were twenty-seven items designed to evaluate work values. The items concerned various aspects of the work context--salaries and benefits, co-workers, the physical environment, the meaningfulness of work, and so forth. Respondents were asked to assess the importance to themselves of each work attribute. The available response categories were then weighted as follows:

4=Very Important/3=Somewhat Important/2=Only Slightly Important
1=Not Important At All

Responses were entered into a varimax factor rotation and six factors were extracted (Table 1). It was possible to assign twenty-five of the twenty-seven items to one or another factor. In a couple of instances, face validity was used to determine to which of two competing factors an item should be assigned. This occurred where an item obtained approximately equal loadings on each of two factors. While we obviously anticipated that work values would factor--Gottlieb's finding that values correspond to course of study among college students implies as much--earlier research has neglected the potential of this technique.

TABLE 1

VARIMAX ROTATED FACTOR LOADINGS

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
	Intrinsic Work Rewards	Security Rewards	Antiwork Ethic	Social Rewards	Inter-personal Rewards	Economic Rewards
Doing meaningful things	.682	.043	.035	.085	.169	-.092
A chance to use your mind and abilities	.677	-.015	-.026	-.052	.184	.020
New challenges	.660	-.053	.005	.129	.113	.073
Intellectual stimulation	.598	.002	.040	.353	-.053	.038
A chance for personal growth	.552	.065	-.025	.266	.202	.111
Freedom to decide how to do the job	.468	.025	.095	.145	.006	.066
Working for a company you respect	.432	.227	.028	.214	.295	.095
Appreciation for a job well done	.403	.087	.113	-.040	.351	.078
A good pension plan	.032	.818	.140	.049	.088	.045
Job security	-.024	.591	.095	.022	.219	.185
Fringe benefits	.109	.588	.241	.138	.105	.204
Being able to retire early enough with good money	.048	.538	.341	.007	-.047	.162
Not having to work too hard	-.068	.235	.682	.065	-.028	.151
A comfortable routine that is easy to handle	-.068	.213	.677	.078	.203	.081
Getting away from problems at home	-.049	.033	.467	.217	.160	.117
Having enough free time to enjoy other things	.183	.136	.436	-.013	-.027	.034
Opportunity for travel	.125	-.014	.316	.555	.035	.157
Meeting interesting people	.413	-.009	.212	.533	.112	.087
Contributing to company's progress	.345	.199	.009	.476	.136	.082
Contribution to society	.425	.150	.059	.428	.029	-.164

TABLE 1 (cont.)

VARIMAX ROTATED FACTOR LOADINGS

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
	Intrinsic Work Rewards	Security Rewards	Antiwork Ethic	Social Rewards	Inter-personal Rewards	Economic Rewards
Having the respect of the people you work with	.340	.196	.099	.097	.527	.052
Friendly people to work with	.307	.087	.228	.076	.418	-.031
An opportunity to make a great deal of money	.064	.211	.291	.174	-.005	.643
A good salary	-.004	.310	.174	-.030	.033	.522
A chance for advancement	.285	.207	.035	.174	.274	.400
Having somewhere to go, something to do everyday	.145	.038	.282	.196	.210	.067
Pleasant physical surroundings	.229	.220	.335	.226	.302	.097
Eigenvalues (before rotation)	6.460	3.312	1.052	1.293	1.120	1.068

The analysis is organized in terms of the factors, which we call Intrinsic Work Rewards, Security Rewards, the Antiwork Ethic, Social Rewards, Interpersonal Rewards and Economic Rewards. Six unweighted sum scores were computed for each respondent based on his answers to the items which define each factor. Five of these[16] and the responses to the associated items themselves provide the basis for much of the analysis. Examining these in terms of age will enable us to evaluate the extent to which the work values or expectations of young workers differ from those of older established workers.

In a parallel set of items, men who were employed at the time of the interview were asked to evaluate their own jobs in terms of the same characteristics of the work context, i.e., salaries, benefits, co-workers and the rest. The available response categories were then weighted as follows:

4 = Excellent/3 = Pretty Good/2 = Only Fair/1 = Poor

A set of sum scores was computed for each respondent corresponding to those created above with reference to work values. Examining these for men in different age groups[17] will enable us to evaluate differences in men's perceptions of their access to various kinds of work rewards as they move through the life cycle.

INTRINSIC WORK REWARDS AND THE ANTIWORK ETHIC

Men place a high value on intrinsic work rewards, the rewards of work activity itself. A majority of the men in this study said that challenge, growth, autonomy and the sense that they were making meaningful contributions were "very important" to them (Table 2). In fact, with one exception--intellectual stimulation--a majority of the respondents indicated that each component of the Intrinsic Work Reward Index was extremely important in their assessment of a job. It is not par-

16. The analysis of the Social Rewards factor was dropped due to space considerations.

17. For ease of presentation, the data concerning men between ages twenty-three and twenty-nine are not reported in the tables. These men are included in the correlations (r's) reported throughout the text.

TABLE 2

INTRINSIC WORK VALUES AND JOB PERCEPTIONS BY AGE, INCOME AND LABOR FORCE STATUS (MEN EARNING LESS THAN $15,000 A YEAR WHO ARE NOT IN SCHOOL OR IN THE MILITARY)

	Percent Responding "Very Important" To Each Intrinsic Work Reward		Percent Rating Own Jobs "Excellent" With Respect To Each Work Reward	
	Age		Age	
Intrinsic Work Rewards	18-22	30-49	18-22	30-49
Doing meaningful things	63.5	65.2	16.5	27.7
A chance to use your mind and abilities	71.9	72.7	19.7	30.2
New challenges	61.2	55.1	18.7	26.6
Intellectual stimulation	41.9	40.9	7.3	15.2
A chance for personal growth	63.6	58.8	18.1	17.1
Freedom to decide how to do the job	54.2	57.7	18.3	32.0
Working for a company you respect	58.4	69.3	20.3	27.1
Appreciation for a job well done	59.8	60.7	15.3	20.3
Intrinsic Work Rewards Indexes	$\bar{X}$ 21.74	27.68	$\bar{X}$ 20.29	23.00
	SD 4.59	4.33	SD 6.25	5.43
	N 256	454	N 169	361
	t 0.18		t 4.83***	

***p < .001

ticularly surprising that intellectual stimulation is devalued by these men since their rather limited educations belie any serious interests in intellectual pursuits.

An impressive percentage of men stress the importance of intrinsic work rewards; hence, minimal emphasis on those values subsumed under what we call the antiwork ethic is to be expected. The antiwork ethic, which refers to opportunities to avoid challenge in work and to maximize extra work goals, is conspicuous because overall it represents those values with the least salience for our respondents (Table 3). Less than a third cite three of the four items--not having to work too hard, a comfortable routine and getting away from problems at home --as "very important." Roughly half of the men stress "having enough free time to enjoy other things." A slightly greater number of young men emphasize the importance of free time and this difference is the major factor providing a statistically significant difference for the index. While the Antiwork Ethic looms larger among young men, an examination of the actual mean scores indicates an impressive continuity of values between young and older men. Extrawork and antiwork goals are not characteristic of men at any age. Interestingly, the partial correlation (r) of the index with employment status[18] controlling for age (.09) indicates a slightly greater tendency for men who are unemployed to hold antiwork ethic values. Similarly ethnic minority men[19] are more likely to value the antiwork ethic (r = .21).

The value attached to intrinsic work rewards is not conditioned by age. The Intrinsic Work Values Index is correlated with ethnicity (-.11) and the size of this correlation is unchanged in the partial where age is controlled. Thus, compared to minorities, white men are somewhat more likely to value intrinsic work rewards. More critically, the small, insignificant negative correlation between Intrinsic Work Values and employment status (-.04) indicates that both employed and unemployed men value intrinsic work rewards equally.

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18. Dummy variable: 0=employed/1=unemployed.

19. Dummy variable: 0=white/1=black, Puerto Rican, Oriental, American Indian, Mexican American.

TABLE 3

ANTIWORK ETHIC VALUES AND JOB PERCEPTIONS BY AGE, INCOME AND LABOR FORCE STATUS (MEN EARNING LESS THAN $15,000 A YEAR WHO ARE NOT IN SCHOOL OR IN THE MILITARY)

	Percent Responding "Very Important" To Each Antiwork Ethic Job Reward		Percent Rating Own Jobs "Excellent" With Respect To Each Work Reward	
	Age		Age	
Antiwork Ethic Rewards	18-22	30-49	18-22	30-49
Not having to work too hard	17.8	20.7	8.3	7.9
A comfortable routine that is easy to handle	29.0	30.4	11.8	14.4
Getting away from problems at home	19.2	15.7	9.0	16.6
Having enough free time to enjoy other things	53.8	47.8	15.5	15.8
Antiwork Ethic Indexes: $\bar{X}$	10.75	10.06	10.06	10.79
SD	3.37	3.58	2.52	2.56
N	258	457	160	323
t	2.58**		3.02**	

**p < .01

While the value men attach to intrinsic work rewards is not influenced by age, older men do perceive greater access to these rewards. Except for one item--a chance for personal growth--more older men, those between thirty and forty-nine, indicated that the rewards provided by their own jobs were "excellent." Moreover, the magnitudes of the differences between the two groups of workers is substantial in most cases, a fact that is clearly reflected in the signicant difference found in the Intrinsic Work Rewards Index.

In sum, younger and older men equally value work for the rewards inherent in the activity. Quite consistently, though, fewer young men believe that their jobs are effectively providing them with these rewards. But even among older men, the percentages rating their jobs as "excellent" with respect to each item is, in virtually every case, less than half of the percentage stating that a given work value is "very important" to them.[20] Modern industrial societies rely on the internalization of certain values, values that advance worker involvement in the task. Based on our data, the American system is conspicuously successful in fostering these values but markedly less successful in providing for their satisfaction.

This disparity between values and satisfaction clearly raises a significant issue, as the character of work in industrial and post-industrial societies continues to change, to become progressively more abstract and routine. Accompanying these changes is a decline in access to creative and meaningful job activity. This would appear to be particularly true for the kinds of entry-level positions available to younger men with limited education, jobs requiring minimal skills and virtually no experience. As these young men gain experience in the labor force, the content of their work roles will presumably be upgraded, providing somewhat greater access to intrinsic work rewards

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20. Throughout the analysis, the percentages rating their jobs as "excellent" with respect to a given characteristic generally increases (but the disparity by age is sustained) when just those men describing it as "very important" are considered. Thus, men who consider a trait important appear to be more likely than others to find it in their jobs.

for some. For others, alternative outcomes are suggested by Chinoy's study of automobile workers.[21] To what degree is displacement of aspirations still applicable? Do other sectors of life, such as leisure activity, take on added significance for men deprived of meaning in their work? The development and maintenance of values across the life cycle remains unexamined.

SECURITY AND ECONOMIC WORK REWARDS

Understandably, most men are highly concerned with the security of their jobs. In fact, more men cite job security as "very important" to them than any other work value considered in this analysis (Table 4). The very modest, insignificant tendency for more older men, those between thirty and forty-nine, to attach considerable importance to job security is perhaps surprising in view of the well recognized fact that the risks of unemployment are borne disproportionately by the young. About ten percent of the men in this study who are twenty-three or older describe themselves as unemployed. Among nonstudents between eighteen and twenty-two this rises to 24%. Young men are less likely to have dependents and, more critically, experience fewer concerns for protecting their pension interests. While job insecurity and unemployment are undesirable for the overwhelming majority of all men (indeed, only 1% of the men in this study said that job security was "not important at all" to them), it creates fewer personal dislocations for young men. For the older worker, it is the magnitude of dislocation rather than the actual risk of unemployment that provokes such marked concern for job security.

Monetary concerns rival concern for job security among these men (Table 5). This recognition implies that the trade-off of income for security that may once have shaped occupational values is no longer viable. Among younger respondents, the percentage saying "a good salary" is "very important" (72%) is roughly equivalent to the number stressing "job security." While somewhat fewer older men emphasize salary, the

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21. Ely Chinoy, Automobile Workers and the American Dream (Garden City: Doubleday, 1955).

TABLE 4

SECURITY WORK VALUES AND JOB PERCEPTIONS BY AGE, INCOME AND LABOR FORCE STATUS (MEN EARNING LESS THAN $15,000 A YEAR WHO ARE NOT IN SCHOOL OR IN THE MILITARY)

	Percent Responding "Very Important" To Each Security Work Reward		Percent Rating Own Jobs "Excellent" With Respect To Each Work Reward	
	Age		Age	
Security Rewards	18-22	30-49	18-22	30-49
A good pension plan	49.0	66.8	9.6	12.5
Job security	72.8	75.9	12.0	24.0
Fringe benefits	51.2	59.0	10.2	19.9
Being able to retire early enough with good money	39.7	48.8	2.4	9.5
Security Work Rewards Indexes	$\bar{X}$ 13.30	13.83	$\bar{X}$ 8.54	10.20
	SD 2.67	2.62	SD 3.14	2.98
	N 260	460	N 156	371
	t 2.56*		t 5.56***	

*p < .05
***P < .001

TABLE 5

ECONOMIC WORK VALUES AND JOB PERCEPTIONS BY AGE, INCOME AND LABOR FORCE STATUS (MEN EARNING LESS THAN $15,000 A YEAR WHO ARE NOT IN SCHOOL OR IN THE MILITARY)

Economic Work Rewards	Percent Responding "Very Important" To Each Economic Work Reward		Percent Rating Own Jobs "Excellent" With Respect To Each Work Reward	
	Age		Age	
	18-22	30-49	18-22	30-49
An opportunity to make a great deal of money	44.6	35.4	9.3	8.9
A good salary	72.0	68.1	9.2	11.0
A chance for advancement	66.2	57.4	15.1	14.2
Economic Work Rewards Indexes				
X	10.55	9.97	6.95	7.49
SD	1.55	2.01	2.34	2.10
N	259	459	176	380
t	4.34***		2.58**	

**p < .01
***p < .001

percentage is still substantial (68%). The conclusion that practical concerns are disproportionately salient for working-class men is reinforced if we compare these findings with data for college seniors. Based on the studies reported by Davis[22] and Gottlieb[23] which included college women, who presumably devalue such practical concerns, the percentage of young men in this study who say that "an opportunity to make a great deal of money" is "very important" (45%) is substantially greater. Thirty-one percent of the college men in the present sample share this view, suggesting that even in the context of an unfavorable economic climate, the disparity persists.

The differences between younger and older men in the value attached to both economic rewards and security rewards are once again very small but, nonetheless, statistically significant. Older men are somewhat more likely to stress Security Rewards, most notably as these relate to pension considerations. Older men were expected to emphasize security; it was surprising, however, to find a roughly comparable level of concern for this kind of security among young men. Conversely, young men disproportionately value economic rewards in terms of both income and promotion opportunities. It should be remembered that young men report substantially lower earnings; moreover, the major economic investments of their lives lie in an uncertain future, with marriage, children and home ownership. Again, however, the explanation for age disparities appears more compelling than the observed disparities themselves, which are of a minor order. The inescapable conclusion is that impressive continuity exists with reference to economic and security values, or the practical goals of work.

Men who are unemployed are no more likely to stress security ($r = -.01$) and are virtually indistinguishable from employed men in their emphasis on economic rewards ($r = .08$), suggesting that unrealistic salary expectations are probably not implicated in their unemployment. Ethnic minorities are slightly more disposed to emphasize secur-

22. Davis, op. cit.

23. David Gottlieb, Youth and the Meaning of Work (Washington: U.S. Department of Labor, 1974).

ity (r = .10) and economic rewards (r = .14).

There is a measurable gap between the importance men attach to security and economic values and their perceptions of their own access to these rewards. The gap is more evident for young workers, particularly with reference to security rewards. Disenchantment with access to the practical goals of work is not widespread, however. For both indexes--Economic Rewards and Security Rewards--the hypothetical "average" respondent says that these are "very important" values; he rates his own job as merely "good" with respect to these same rewards. And in both cases--in terms of security and economic rewards--young workers are somewhat less satisfied that their goals are being realized in their present jobs.

INTERPERSONAL WORK REWARDS

The impact of coworkers, or the general interpersonal climate describing the workplace, on work performance and satisfaction is one of the major themes of modern industrial sociology. The individual's social and psychological requirements often effectively compete with economic interests; as the Western Electric studies demonstrated over a generation ago, to maintain the esteem or good will of fellow workers, the individual is often prepared to forego, in some measure, his own immediate economic self-interest.[24]

Consistent with this well documented aspect of industrial social psychology, a substantial majority of American workers rate "having the respect of fellow workers" and "working around people you like" as being "very important" for job satisfaction (Table 6). The disparity between older and younger men in the importance they assign to the quality of the interpersonal climate of the work place is not statistically significant. At all age levels, majorities of men endorse the importance of social relationships for satisfaction.

While the importance of a positive interpersonal climate at the work place achieves high and generally equal levels of support, there

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24. F. J. Roethlisberger and William J. Dickson, Management and the Worker (Cambridge, Mass.: Harvard University Press, 1939).

TABLE 6

INTERPERSONAL WORK VALUES AND JOB PERCEPTIONS BY AGE, INCOME AND LABOR FORCE STATUS (MEN EARNING LESS THAN $15,000 A YEAR WHO ARE NOT IN SCHOOL OR IN THE MILITARY)

	Percent Responding "Very Important" To Each Interpersonal Work Reward		Percent Rating Own Jobs "Excellent" With Respect To Each Work Reward	
	Age		Age	
Interpersonal Work Rewards	18-22	30-49	18-22	30-49
Having the respect of the people you work with	56.9	66.4	18.1	30.9
Friendly people to work with	68.2	67.9	29.7	34.9
Interpersonal Work Rewards Indexes				
$\bar{X}$	7.12	7.17	5.89	6.34
SD	1.11	1.21	1.37	1.26
N	260	461	181	380
t	0.63		3.86***	

***p < .001

is not an equivalent generality in the realization of this kind of interpersonal work climate. At all age levels, only a portion of the men who see this aspect of work as important also describe their present jobs as fully providing it. Once again, it is among the younger workers that this disparity between commitment to the value and its realization in their present jobs is the greatest.

For older workers, the disparity is smaller than we have observed in terms of other major values, such as meaningful activity, income, and job security. However, given that a supportive interpersonal climate should be, at least theoretically, a "free resource," not dependent on the specific character of work--something that is, as it were, the gift of fellow workers--the fact of any disparity raises some interesting questions. Clearly, we still have much to learn about the factors determining the interpersonal climates that develop in specific work environments.

The greater disparity for younger workers between the level at which the interpersonal is viewed as important and what they find in their present jobs raises some additional questions. We noted earlier Coleman's argument that certain advantages follow the early integration of youth into adult society, particularly where the context of serious work is concerned. One such advantage, of considerable significance, was the presumed minimization of tendencies to develop an alienated self-image--a self-image drawn in isolation from, and ultimately hostile towards, the adult world. The age-linked disparities we have observed would suggest that involvement in the world of adult work (or with older adults within the world of work) does not necessarily eliminate these risks. Indeed, even for those who have learned to value the approval and respect of other, presumably older, workers, the experience of approval and/or respect does not automatically follow. Entry into the world of work, with the implication of at least a partial withdrawal from adolescent or youth ghettos, may actually lessen the risks of alienative responses to the adult world but it far from eliminates such risks. Further research might well focus on the kinds of entry strategies that maximize opportunities for winning respect

and approval as against those which do not. Consistent with the other kinds of work values we have examined, acceptance of conventional values does not appear to be lacking among young workers; it is their realization that is uncertain.

SUMMARY

The dominant theme in our analysis has been that substantial and persistent continuity characterizes the present work values of younger and older men. We have noted very small but statistically significant differences in their values with reference to three of the five value indexes we considered--security values, economic values and the anti-work ethic. These differences provide a basis, albeit weak, for concluding that more youths compared to older workers, have abandoned traditional work values and that immediate self-interest is more likely to characterize their concerns. We believe that such conclusions would be irresponsible in view of the magnitudes of the differences we find. Despite differences, a majority of men at all ages share similar values regarding what is desirable in work.

An obvious difficulty confronts us with reference to the distinction between cohort and generational effects. Since these young men have matured during an historical period distinct from that conditioning the initial entry into the labor force of the older men, the modest disparities in values we observe may, in fact, mark an ongoing evolution in the work values of American men. Alternatively, with growing experience in the world of work, these young men may become fully indistinguishable from their older counterparts. Values are not formed in a vacuum. They are learned, tested and modified in the experiences of a lifetime. Continuity in experience carries the promise of continuity in values.

Throughout the analysis, we have noted the influence of two factors besides age on work values--ethnicity and employment status. Where the first-order correlations (controlling for age) implied that either of these factors conceivably accounted for at least 1% of the variance in values, we have noted that a causal relationship may exist. In no instance did employment status appear to substantially influence val-

ues (or vice versa). Thus, on the whole, unemployment experience among these men appears to be independent of their values.

Minority status does seem to influence values; it appears to diminish intrinsic work values, to increase the emphasis on economic and security rewards and to be associated with greater endorsement of the antiwork ethic. It should be recognized that the occupational niches of these minority men undoubtedly continue to deny them equal access to meaningful work, job security and equal pay. Moreover, the coefficients are very small, suggesting that among the yeomanry of the American labor force there is a single predominant climate of values and these have remained fairly traditional. If the subcultural experience is different, it is not markedly different with reference to work values. Subcultural differences might best be explored on the level of differences in labor force opportunity and experience.

The emphasis of minority men on the antiwork ethic is more substantial. The first-order partial correlation implies that minority status may account for as much as 4% of the variance in the antiwork ethic. The critical question--one that requires more detailed data than we have--is whether the content of work intervenes in the relationship between minority status and the antiwork ethic. Men locked into jobs that notably deprive them of access to meaningful job activity may come particularly to value antiwork rewards, what Becker has called "side bets."[25] Since minorities are more likely to hold such jobs, it may be the job rather than ethnic background that accounts for the correlation.

A second dominant theme emerged that was significantly and consistently related to age. There was a recurring pattern where relatively few men report full realization in their present jobs of aspects of work that they highly value. While not suggestive of massive distress or discontent, we are not provided with a picture of uniformly high levels of satisfaction. The discrepancy between ideal values and the realities of work experience is most extreme for the younger workers.

25. Howard S. Becker, "Notes on the Concept of Commitment," American Journal of Sociology, vol. 66 (July 1960), pp. 32-40.

This discrepancy may flow from several factors. It may reflect the impatience of youth who have not yet made their best bargain with the world of work. Alternatively, it may reflect differences in the intensities with which otherwise similar values are held.

Whether the potential for dissatisfaction will deepen or erode with time cannot be assessed using these data. The data unambiguously indicate, however, that there has been overwhelming continuity in the work values of contemporary American men. This, in turn, suggests that to the degree that patterns of labor force participation by younger workers has taken on aspects of the problematic, these can only be understood by a comprehensive exploration of the concrete labor force experiences of such young workers and the broader context of their values and life style commitments.

The question asked at the outset, "Do youth really want to work?" can now be at least partially answered. They appear to value work and to value it in ways not unlike their fathers and older brothers. Whether this translates into effective work careers obviously depends on the kinds of work and work rewards that are made available to them. The outcome may also depend on changes in values, opportunities and experiences in other sectors of life, sectors of life which we monitor even less well than we monitor the current work experience, which is not very well at all.

THE RELATIONSHIP BETWEEN YOUTH EMPLOYMENT AND FUTURE EMPLOYABILITY AND EARNINGS

BY: Wayne Stevenson

ABSTRACT

In making the transition from school to work most teenagers and young adults experience some periods of unemployment. The sporadic nature of youth labor force participation in conjunction with high turnover and the part-time nature of youth jobs no doubt contributes to the high incidence of unemployment observed among this age group. The probability of experiencing unemployment, however, declines rapidly with age, suggesting that it represents a fairly short-term transitional problem. In this paper it is shown that after controlling for related variables, early labor force status has a significant impact on subsequent employability and earnings. Jobless periods, particularly for out-of-school youth, constitute a loss which results in real disadvantage for years to come.

The 1970s have seen unemployment among teenagers (sixteen to nineteen years of age) and young adults (twenty to twenty-four of age) reach record proportions, with nearly one-half of all unemployed Americans from these age categories.* Roughly twenty percent of all teenage labor force participants were unemployed in 1977, with the rate among blacks reaching thirty-seven percent. In urban areas the rate among black teenagers is well over forty percent.[1] Furthermore, while an average of 3.4 million sixteen to twenty-four-year-olds were unemployed at any given time in 1976, the number experiencing some unemployment during the year is estimated to be three times as great.[2] The magnitude and persistence of the problem has placed youth unemployment in the forefront of labor

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1. Garth L. Mangum and Stephen F. Seninger, Coming of Age in the Ghetto: The Dilemma of Ghetto Youth Unemployment, a report submitted to the Ford Foundation, December 1977.
2. Arvil V. Adams et al., The Lingering Crisis of Youth Unemployment, a report submitted to the E.W. Upjohn Institute for Employment Research, 1978.

market policy and has created considerable interest in the question of causes and consequences joblessness among the nation's youth.

The high incidence of youth unemployment can no doubt be attributed in large part to the process of transition from school to work. Folk[3] and Kalachek,[4] for example, argue that teenage entry and reentry into the labor force (which accounted for 70% of teenage unemployment in 1976) plus the part-time status of youth jobs combine to create highly unstable employment patterns. Teenagers account for a disproportionate share of job seekers and, according to Freedman,[5] change jobs and move in and out of the labor force with greater frequency than any other age group. This intermittent entrance and reentrance into the labor force results in less than one-fourth of all unemployed teens being job losers while over fifty percent of older unemployed workers left their last job involuntarily.

Another important characteristic of youth unemployment is that the situation improves with aging. As workers reach the age of twenty-five, labor force participation rises, work becomes predominantly full-time, and most significantly, unemployment rates fall (See Table 1). Thus, the high incidence of unemployment among youth is viewed by Kalachek,[6] Johnston and Backman,[7] and others as playing a functional role in

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3. Hugh Folk, "The Problem of Youth Unemployment," in The Transition From School to Work: Processdings of the Princeton Manpower Symposium, May 9-10, 1968 (Princeton: Princeton University Press, 1968).

4. Edward Kalachek, The Youth Labor Market, Policy Papers in Human Resources and Industrial Relations, No. 12 (Ann Arbor, Michigan: Institute of Labor and Industrial Relations, University of Michigan-Wayne State, 1969).

5. Marcia Freedman, "The Youth Labor Market" in National Commission for Manpower Policy, From School to Work: Improving the Transition (Washington: Government Printing Office, 1976).

6. Kalachek, op. cit.

7. Johnston and Backman, The Transition from High School to Work: The Work Attitudes and Early Occupational Experience of Young Men (Ann Arbor, Michigan: The University of Michigan, 1973).

TABLE 1

UNEMPLOYMENT RATE BY AGE, SEX, AND RACE, 1976

	14-15	16-17	18-19	20-24	25-34	35-44	45-54	55-64	65+
Total	14.8	21.1	17.4	12.0	7.1	4.9	4.5	4.5	5.1
Males	16.2	21.4	17.6	12.0	6.2	4.1	4.0	4.2	5.2
White	13.7	19.7	15.5	10.9	5.6	3.7	3.7	4.0	4.8
Nonwh.	41.3	37.7	34.0	20.7	11.0	7.3	7.2	6.2	9.3
Females	13.1	20.7	17.3	11.9	8.5	6.1	5.2	4.9	5.0
White	10.3	18.2	15.1	10.4	7.6	5.8	5.0	4.8	5.3
Nonwh.	45.5	46.0	35.0	21.7	13.0	8.1	6.1	5.5	2.6

Source: U.S. Dept. of Labor, Employment and Trainfng Report of the President, Employment and Training Administration, U.S. Gov't. Printing Office, Washington, D.C., 1977, Table A-19.

providing useful labor market experience. Frequent jobless periods and turnover aid new labor force entrants in learning effective methods of job search and in adjusting expectations to the realities of the labor market. It may even be the case that high turnover and the associated joblessness experienced by teenagers are consistent with the temporary, part-time employment desired by youth workers.[8] These observations, in combination with the apparent improvement over time, frequently lead to the conclusion that youth unemployment is a transitory problem experienced by most and not greatly hindering successful assimilation into the labor force. Theory and intuition suggest, however, that to be frequently unemployed during the early years deprives an individual of valuable work experience, information, skills and contacts and is likely to have injurious effects later on.

It is the purpose of this paper to document the long-run consequences of the youth labor market experience. This is done by following longitudinally one group of young men and women from their teenage years into early adulthood. This analysis demonstrates that early labor market experiences are related to subsequent measures of labor market success. Not only does youth joblessness identify a target group of individuals who are likely to have trouble later on, but after controlling for a number of personal characteristics, youth labor force status is seen to exert an impact of its own on subsequent experiences. These findings suggest that youth unemployment is more than a short-term problem and its consequences may include long-term problems of employability and earning capacity.

DATA AND METHODOLOGY

The conclusions drawn in this paper are based on analysis of the National Longitudinal Surveys of Young Men and Young Women.[9] The NLS data were designed to allow for measurement of sources of variation in the labor market experiences of each cohort. The data therefore include

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8. Paul Osterman, "The Structure of the Labor Market for Young Men," working paper, Boston University, 1977.
9. For a description of this data see Herbert Parnes, The National Longitudinal Surveys (Columbus, Ohio: Center for Human Resources Research, 1974).

a broad sampling of economic, social, and attitudinal characteristics of the youth population. Labor force concepts and definitions are consistent with those employed in the Current Population Surveys.

The analysis described here is based on data for males and females who were sixteen to nineteen years of age in the initial survey year. Data were collected over a period of seven years beginning in 1966 for the men and in 1968 for the women. In the initial survey years over two thirds of these respondents were enrolled in school. By the final survey year, when those examined ranged in age from twenty-three to twenty-six years of age, less than 15% were still attending school. Furthermore, 90% of the males and 70% of the females were labor force participants, about 5% of whom were unemployed. So aside from recreation and family responsibilities, the major activity of most teenagers is school. On the other hand, by the time the cohorts range in age from twenty-three to twenty-six the dominant activity is work. Thus, the important years of the school to work transition are covered by the analysis.

YOUTH LABOR FORCE STATUS AND LATER EXPERIENCES

Many aspects of youth's labor market experience during the school to work transition have been well documented. Temporary, part-time work begins for most before school has been completed. Early work experience tends to be in occupations and industries associated with high turnover, low pay and a high incidence of part-time work. In contrast, employment patterns of those in their mid-twenties reflect fairly consistently those observed among adult workers.

Parnes and Kohen have shown, in a longitudinal analysis of 2,100 noncollege males, that movement up the occupational ladder correlates highly with education, work experience, and increased labor market experience.[10] The role of family background and other socio-economic

10. Herbert Parnes and Andrew Kohen, "Labor Market Experience of Non-College Youth: A Longitudinal Analysis" in National Commission for Manpower Policy, From School to Work: Improving the Transition (Washington: Government Printing Office, 1976).

status measures have been examined by Adams et al,[11] Hall and Kasten,[12] and Corcoran.[13] Race, sex, education, marital status, and region of residence seem to have the greatest and most consistent effect on early labor market success. The importance of entry level jobs is demonstrated by Ornstein.[14] What is not well documented, however, is the effect early labor market experience has on later employability and earning capacity.

. There is little surprise in the finding that labor force participation increases, unemployment declines, and earnings grow as individuals move from their teens into adulthood. While a large majority find employment, however, there is considerable variation in the stability, security, and rewards associated with the work. What is of interest is the extent to which unsatisfactory experiences at an early age are related to later labor market activity and success. Economic theory suggests that education and labor market experience are important determinants of labor force status and earnings.[15] So for those making the transition from school to work, time spent in school or working represents the acquistion of skills, experience, or contacts which can be expected to be beneficial later on. Being unemployed or out of the labor force while in school will have little effect as basic education is a good substitute for on-the-job training and work experience. Joblessness experienced while out of school, however, represents a serious

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11. Adams et al., op cit.

12. Robert E. Hall and Richard A. Kasten, "Occupational Mobility and the Distribution of Occupational Success Among Young Men," American Economic Review, vol. 66, No. 2 (May 1976), pp. 309-15.

13. Mary Corcoran, Christopher Jencks, and Michael Olneck, "The Effects of Family Background on Earnings," American Economic Review, vol. 66, No. 7 (May 1976), pp. 430-35.

14. Michael D. Ornstein, Entry Into The American Labor Force (Toronto: York University Press, 1976).

15. See, for example, G.S. Becker, Human Capital (New York: National Bureau of Economic Research, 1964); and G. Hanoch, "An Economic Analysis of Earnings and Schooling," Journal of Human Resources, vol. 2 (Summer 1967), pp. 310-29.

loss which can be expected to result in relative disadvantage later on.

The National Longitudinal Surveys of Young Men and Young Women allow for a comparison of youth labor market activity and success at a later stage. Even with the comprehensive data available it is not possible to recreate the work history of each individual. It is possible, however, to relate survey week labor market and school enrollment status with subsequent experience. While this does not isolate those with chronic or persistent labor market problems, it does fairly accurately reflect the activities of the youth population at any particular point in time and is consistent with Bureau of Labor Statistics methods of classification. Comparing later labor market activity and success provides considerable insight into the meaning and importance of the high teenage unemployment rate reported in recent years.

Table 2* shows the relationship between labor force status in the final survey year and that experienced during earlier periods. While 92.4% of the young men and 60% of the young women were in the labor force, the proportions change considerable depending on earlier experiences. Those out of school and out of work as teenagers are far less likely to be current labor force participants. For those currently in the labor force, the probability of being unemployed is much higher if the teenage period was spent both out of work and out of school. Current labor force participation is the highest for those who were employed as teenagers. As expected, being out of work but in school has a much smaller effect on subsequent employability than being out of work and out of school. Only for the women is teenage unemployment while in school related to later participation rates. Being out of the labor force while in school, however, has a negligible effect. Young adult labor force status is more closely correlated with later experiences. Labor force participa-

*The following tables and portions of the corresponding discussions have been extracted with modification from Wayne Stevenson, "The Relationship between Early Work Experience and Future Employability," in Arvil V. Adams, et al., The Lingering Crisis of Teenage Unemployment, a report submitted to the W.E. Upjohn Institute for Employment Research, 1978.

TABLE 2

LABOR FORCE STATUS IN FINAL SURVEY YEAR BY
EARLIER SCHOOL ENROLLMENT AND LABOR FORCE STATUS

Status and Age Per Survey Year	Final Survey Year (23 to 26 Years of Age)					
	Men			Women		
	Employed	Unemployed	Out of Labor Force	Employed	Unemployed	Out of Labor Force
First Survey Year (16 to 19 Years of Age):						
In school—						
Employed	92.2	5.1	2.7	67.8	8.4	23.8
Unemployed	92.0	8.0	0.0	51.4	6.8	41.9
Out of labor force	91.4	3.7	4.9	67.4	7.2	25.4
Out of school—						
Employed	95.2	1.7	3.1	60.4	6.1	33.6
Unemployed	89.7	6.9	3.4	42.3	8.5	49.3
Out of labor force	78.9	7.9	13.2	37.7	7.7	54.5
Fifth Survey Year (20 to 23 Years of Age):						
In school—						
Employed	95.4	3.3	1.3	91.7	1.7	6.6
Unemployed	100.0	0.0	0.0	57.1	14.3	28.6
Out of labor forcd	94.3	3.4	2.3	76.9	9.6	13.5
Out of school—						
Employed	95.2	2.9	1.9	72.2	6.7	21.1
Unemployed	80.0	9.3	10.7	49.5	13.8	36.7
Out of labor force	62.2	13.3	24.4	32.8	7.5	59.7
TOTAL	92.4	4.0	3.5	60.0	7.3	32.7

Source: National Longitudinal Surveys.

tion is considerably lower and the probability of being unemployed in the final survey year is higher for both young men and young women who were out of school and out of work as young adults twenty to twenty-three years of age.

Early school enrollment and labor force status are clearly correlated with later labor market activity. Table 3 shows that this carries over to differences in wage and salary income. Once again, youths out of school and out of work as teenagers or young adults carry this disadvantage with them into the early adult years. The most serious disadvantage is found among those who spent an earlier period out of school and out of the labor force. Current earnings for these individuals are about half the average for their race-sex cohort.

There appears to be little question that, on the average, those having difficult labor market experiences as youths are the same individuals who have difficulties later on. While many unemployed youths successfully move into well paying, permanent positions, many will not do so by the time they are in their mid-twenties and, as a result, face a real disadvantage as adult workers. Youths who are unemployed and out of the labor force and are also out of school define an important target population that can be expected to find labor force assimilation difficult. This is especially true if they are blacks or women.

THE NET EFFECT ON SUBSEQUENT EXPERIENCES

That youth labor force and school enrollment status is correlated with later labor market success does not necessarily suggest a causal relationship. The same factors contributing to early experiences may be operating later on as well. Whether or not the pattern remains the same after controlling for differences in background, education, and other factors is the issue addressed in this section.

Table 4 shows the results of multiple regression analysis designed to isolate those factors which explain differences in earnings of young adults who are out of school. The groups analyzed consist of young men and young women who were sixteen to nineteen years of age in the initial survey year and out of school in the final survey year. Earnings are observed seven years later when the group ranges in age from twenty-three

TABLE 3

MEAN EARNINGS BY PRIOR LABOR FORCE AND SCHOOL ENROLLMENT STATUS FOR AGING COHORTS OF YOUNG MEN AND YOUNG WOMEN WHO WERE OUT OF SCHOOL IN FINAL SURVEY YEAR

Status and Age Per Survey Year	Final Survey Year (23 to 26 Years of Age)			
	Men		Women	
	White	Black	White	Black
Grand Mean	7553.59	5648.50	3646.48	3469.14
First survey year (16 to 19 years of age):				
In school—				
Employed	7784	5797	4188	4295
Unemployed	6858	5644	3465	3224
Out of labor force	6939	5564	4292	3803
Out of school—				
Employed	7423	5937	3308	3791
Unemployed	6816	4077	2226	3120
Out of labor force	4676	3921	1962	1879
	F=3.25***	F=1.60	F=10.81****	F=5.21****
Fifth survey year (20 to 23 years of age):				
In school—				
Employed	7988	6036	5695	3985
Unemployed	8036	4550	5344	4118
Out of labor force	6309	3785	4710	4806
Out of school—				
Employed	7918	6065	4744	4757
Unemployed	6289	5124	2753	2670
Out of labor force	3959	2084	1222	1530
	F=7.55****	F=5.14****	F=51.09****	F=27.61****

Significance Levels: 10% (*) 5% (**) 1% (***) 0.1% (****)

Source: National Longitudinal Surveys

TABLE 4

CORRELATES OF WAGE AND SALARY INCOME IN FINAL SURVEY YEAR FOR OUT-OF-SCHOOL YOUNG MEN AND YOUNG WOMEN[a]

Explanatory Variables	Males		Females	
	White	Black	White	Black
Age	338.80***	235.46*	-95.99	296.00**
	(2.78)	(1.41)	(0.94)	(2.29)
Years of School Completed	227.67****	170.24**	357.62****	404.69****
	(3.41)	(1.85)	(6.47)	(5.64)
Socioeconomic Status	4.17	18.12*	-1.33	9.36
	(0.54)	(1.60)	(0.20)	(1.20)
Married	1909.44****	1987.58****	-1846.89****	-431.93*
	(6.86)	(5.43)	(7.37)	(1.49)
Living in SMSA	959.97****	678.10*	na	na
	(3.59)	(1.59)		
Labor Market Knowledge	44.90**	10.82	250.15****	207.82***
	(2.08)	(0.38)	(3.48)	(3.05)
Training[b]	1546.50****	1933.76****	1569.69****	2339.04****
	(5.33)	(4.12)	(6.44)	(6.72)
R^2 (adjusted)	0.13	0.19	0.18	0.29
Degrees of Freedom	1008	299	980	384

[a] Wage and salary income reported in final survey year for those who were sixteen to nineteen in initial survey year.

[b] Dichotomous variable assuming value 1 for those who received training and reported using it on the job and zero otherwise.

Significance Levels: 10% (*) 5% (**) 1% (***) 0.1% (****)

Source: National Longitudinal Surveys

to twenty-six. Each cohort is partitioned on the basis of race, an element whose effect on earnings is well known.

Stratified by race and sex, the regression equations explain between 13% and 29% of the variation in annual wage and salary income. Age, education, and marital status have significant effects upon earnings. Earnings tend to rise with age, even within the small range represented here, and also increase with each year of school completed. The is true for blacks as well as for whites.

Socio-economic status does not appear to have its expected effect on earnings after one controls for education and labor market knowledge (which is highly correlated with background, education, and earnings). So, while their separate effects are difficult to isolate, education, background, and labor market information (or general intelligence) combine to influence earnings significantly.

Other factors demonstrating a predictable effect are marital status and region of residence. For men, being married is associated with nearly $2,000 per year in additional earnings. Women, on the other hand, earn considerably less if they are married. It is also of interest that men living in a city or its suburbs can expect to earn more than comparible rural residents (these statistics are not available for women).

One additional variable is included: in each survey year respondents were asked whether any training was received in addition to formal schooling, and whether the training was ever used on the job. With this information it is possible to isolate those individuals who received and used training during the school to work transition. One out of three respondents indicated that he or she had received such training. Blacks were less likely than whites to participate in training, and young men less likely than young women.

The differences in earnings associated with training used on the job are substantial, ranging from about $1,500 per year for whites to more than $2,300 for black women. Along with the data on years of school completed, this finding for out-of-school youth is highly significant in policy terms for those concerned with the low earnings of youth and the earning differences by race and sex. Although these results do not

distinguish among specific training programs, they do indicate that when training is tailored to the needs of the labor market as well as the individual, reflected in use on the job, the gains are generally substantial and lasting. More importantly, these gains are present for young men and young women, black and white.

Controlling for these correlates of wage and salary earnings, one can also determine how the early labor market experiences of youth affect subsequent earnings. At issue is whether individuals with roughly equivalent backgrounds but different early labor market experiences can expect subsequent earnings to differ in a predictable manner. Table 5 allows such comparisons after adjusting for differences in age, education, socioeconomic status, marital status, and place of residence. The observations are stratified by race and sex to account for these differences. The results are based Multiple Classification Analysis, a technique which combines linear regression estimates and analysis of variance to test for significant differences in mean values of a dependent variable after controlling for the effects of other variables included in the model.

The differences in the adjusted means are not as pronounced as the differences for unadjusted means reported in Table 3, but the same general patterns emerge. Again, being without a job while out of school has a significant adverse effect on subsequent earnings. The impact is more pronounced when it occurs between the ages of twenty and twenty-four, but teenage labor force status is also related to subsequent wage and salary earnings.

Whether for young men or young women, black or white, time spent out of school and out of the labor force represents a loss of experience that is associated with a clear earnings disadvantage later on. While the effect is not so great, being unemployed during the school to work transition also has an adverse effect. This is particularly true if the spell of unemployment comes while the person is out of school. Those who experience unemployment while in school can expect to earn less on an average than those successfully employed while in school or out of the labor force and devoting full time to school activities.

The differences by race and sex are even greater. Among young men,

TABLE 5

ADJUSTED MEAN EARNINGS BY PRIOR LABOR FORCE AND SCHOOL ENROLLMENT STATUS FOR AGING COHORTS OF YOUNG MEN AND YOUNG WOMEN WHO WERE OUT OF SCHOOL IN FINAL SURVEY YEAR

Status and Age per Survey Year	Final Survey Year (23 to 26 Years of Age)			
	Men		Women	
	White	Black	White	Black
Grand Mean	7621.90	5713.46	3694.66	3518.39
First Survey Year 16 to 19 Years				
In School				
Employed	7948	5989	3936	4004
Unemployed	7445	5852	3246	2532
Out of labor force	7546	6095	3944	3691
Out of School				
Employed	7481	5596	3793	3790
Unemployed	7287	4857	2871	2988
Out of labor force	5834	3940	2871	2855
	F=2.36**	F=2.30**	F=11.045****	F=5.18***
Fifth Survey Year 20 to 23 Years				
In School				
Employed	7565	4334	4720	4728
Unemployed	6647	3051	4530	3789
Out of labor force	6649	3407	3715	3808
Out of School				
Employed	7972	6244	4792	4743
Unemployed	6674	4928	2684	2905
Out of labor force	4886	3787	1821	1860
	F=7.50****	F=4.01***	F=52.26****	F=29.25***

[a]Adjusted to account for differences in education, socioeconomic status, marital status, age, and living in an SMSA.

Significance Levels: 10% (*) 5% (**) 1% (***) 0.1% (****)
Source: National Longitudinal Surveys

out of school black youths are more seriously affected by adverse early labor market experiences. Among young women, however, no differences by race are apparent. Young women, black and white, are more seriously affected by adverse early labor market experiences than young men. These findings sharply contradict the thesis that youth unemployment is a phase through which every youth passes, with no long-term adverse consequences.

CONCLUSIONS

The relationship demonstrated here between early labor market status and subsequent employment experience provides useful information for future policy making. Youth joblessness (particularly for those out of school) represents not only an immediate loss but one which persists throughout the period of school to work transition and into the early adult years. Thus, job creation through expansionary policy as well as targeted youth programs has more than a short-term impact. Programs should, however, provide incentives for school completion. Job creation may be counterproductive if opportunities are attractive enough to encourage discontinuation of school activities.

While simple job creation can be expected to ease the school to work transition, the results also suggest that the impact can be magnified through training. The maintenance of youth jobs which also involve the acquistion of useful skills can be expected to improve opportunities greatly for years to come.

In short, any policies which have an impact on the labor market opportunities of youth (such as a lowering of the minimum wage for teenagers) should be analyzed with long run consequences in mind. Any reduction in youth unemployment (particularly among out-of-school youth) can be expected to ease the transition to the labor force and to generate benefits now and for the future.

EMPLOYMENT AND EARNING PATTERNS: THE DYNAMICS OF CHANGE

By: David J. Farber

ABSTRACT

This paper attempts to document the thesis that the change in earning capacity is governed by certain principles, is determinative in nature, and can be projected on the basis of earning patterns in a five-year base period.* These earning patterns are holistic in nature, and can be quantified by the rate of earning cumulation in the base period.

The change in manyears of employment and in earnings from 1958 to 1965-69, for each of eight age groups -- whether of the members of the Social Security Administration's Continuous Work History Sample, or of the 1964 MDTA institutional trainees -- correlates significantly with the rate of earning cumulation in 1958-62. This relationship holds true for men and women of each race when age or education are held constant, and when the CWHS and trainee samples are coalesced into a single population.

The analysis is based on actual earning histories as disclosed by Social Security records for the 1958-69 period, and represents one of the few instances -- perhaps the only instance -- in which changes in employment and earnings of the identical individuals have been systematically traced for an extended period of years.

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* The opinions expressed in this paper are the author's, and do not necessarily represent the views of the agency in which he is employed.

EMPLOYMENT AND EARNING PATTERNS: THE DYNAMICS OF CHANGE

Do federally-sponsored training programs enhance the earning capacity of program participants? As one considers the analytical apparatus which so many economists bring to bear on this issue, its intellectual foundations, in my view, require increasing scrutiny. Consider, for example, three typical statements culled from the writings of several of the more prolific economists who have been involved in the evaluation of training programs. Randomly selected control groups are prerequisites for scientific evaluations of training programs. Childless women have longer working lives than mothers. Lifetime earnings of college graduates exceed those of individuals with lesser schooling.

These statements share a common characteristic; they lack any empirical foundation. Not a single training program of any significant size has been evaluated on this basis, and hence this allegation must be relegated to the realm of untested opinion.[1] Tables of working life, like their counterpart tables of lifetime earnings of lifetime income, are essentially extrapolations of labor force status or earning levels in a given base year, from a

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1. A panel of the National Academy of Sciences found "only one evaluation study, a case study of black girls in an NYC program in Cincinnati, Ohio, which used a true experimental design with random assignment of a study sample to an experimental and control group." Even this small study was flawed by "nonresponse bias through attrition of both controls and experimentals." Final Report of the Panel on Manpower Training Evaluation, National Academy of Sciences, Washington, D.C., January 1974, pp. 12-13.

given age to retirement. They do not represent the actual labor market experience of men and women, but are constructs which assume merely the absence of any change in the course of a lifetime.[2]

The static concepts and measures used in constructing these tables are nonetheless precisely the same as those used by most economists to estimate the change in earnings attributable to participation in training programs.[3] Their means of measurement, I suggest, contradict their purpose.

Purpose and Theme

To demonstrate that changes in employment and earnings do occur during the aging process, that they are determinative in nature, and are governed by certain principles is the overarching purpose of my paper. Based on the empirical evidence disclosed by several hundred thousand actual employment and earning histories, it will be seen that such changes represent a continuous, consistent and predictable process which proceeds through time. Over an extended period of years, I shall demonstrate changes in employment and earnings are

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2. The 1970 tables of working life indicated that "most working life tables... are based upon part or current rates of mortality and labor force participation -- in this case, 1970, but are often used to infer the length of future working life... In the case of women, work life expectancies are those anticipated if their martial status does not change during the rest of their lifetime." Special Labor Force Report 187, "Length of Working Life for Men and Women, 1970." Bureau of Labor Statistics, U.S. Department of Labor, February 1976, pp. A-2 and A-3. These static assumptions are equally characteristic of tables of lifetime earnings or income. Typical is the table of lifetime income for men, published by the Bureau of the Census. "Lifetime income estimates," the table notes, "are a measure of the incomes that could be expected by members of specific education groups in a lifetime... if the mean income estimates by age and education, and life expectancy rates did not change from those existing in the reference year, e.g., 1972." Consumer Income, Series P-60, No. 92, March 1974, Bureau of the Census, U.S. Department of Commerce.

3. It is interesting that a recent volume which summarizes more than 200 evaluations of training programs faithfully reflects the fact (continued on next page)

outgrowths of, and are correlated and commensurate with, four basic patterned rates of earning cumulation which characterize the initial segment of that period.

This thesis is historical and developmental in character, and longitudinal in nature. An individual first entering the labor market, it posits, offers to an employer the attributes, aptitudes and skills he has developed from infancy through adolescence to adulthood--the product of his history. His labor market experiences, thereafter, represent the outgrowth of his history--his past-- as it interacts with the demand for his services in the labor market of the present. From the convergence and resolution of these two forces, there evolve a multitude of earning patterns which increasingly differentiate the labor force--whether men or women, blacks or whites, the older or the younger, the more or the lesser schooled, the disadvantaged or the more fortunate. And because these earning patterns reflect the interactional effects of all the forces--known and unknown-- responsible for the change in earning capacity, they are continuous in character, and are cumulatively and increasingly determinative in their effects.

Four Earning Patterns

Although earning patterns may be virtually numberless, they may all be reduced to four basic types. Assuming that individuals seek to maximize their earnings within a given time span, we may initially distinguish between workers at two extremes of a continuum of earning patterns. At each extreme are those whose annual earnings increase or decrease during a five year base period. The first, we characterize as RISERS (R), the second as DECREASERS (D). Intermediate

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(continued from previous page)
that in none of these evaluations is the measurement of the change of earnings considered a problem. Indeed, the index to the entire colume contains no item which refers to "change," or to its measurement. (Perry, Anderson, Rowan and Northrup, The Impact of Government Manpower Programs, The Wharton School, University of Pennsylvania, 1975.)

between these two are the MIXERS (M)--those whose annual earnings both increase and decrease during the five year base period. The remaining pattern group--the CONSTANTS (C)--includes those men and women whose annual earnings neither increased nor decreased during the five year base period.[4]

Each of these purely normative descriptors is quantified or indexed by a characteristic Cumulative Earning Rate--the CER. This measure is calculated by dividing the cumulative earnings of an individual for the last four years, by the first year, of the five year base period. The resulting ratio, of course, can be converted readily to a compound annual rate of earning cumulation. For present purposes, however, such a conversion is not necessary, but for the sake of convenience we shall refer to the CER as the Cumulative Earning Rate.

Since the histories discussed here are taken from Social Security records of the identical individuals, periods of nonemployment are necessarily reflected in the earning patterns. Thus, earning patterns, and their index, the CER, are sensitive not merely to the level of earnings, but to changes in earnings resulting from the effects of nonemployment or underemployment. This means that the pattern concept reflects the organic relationship between employment and earnings which, as we shall see, permits a realistic evaluation of the change in earning capacity.

CHANGE AS A CONTINUOUS PROCESS

Concepts and Measures

For many years, perceptive economists have recognized that measurement of change involves concepts and methods which differ radically from the mensuration of statics. Alfred Marshall, for example, recognized this distinction, and it has been rediscovered and reiterated

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4. For classification purposes increase or decreases in annual earnings were considered significant when they exceeded $100.

by contemporary economists since his time--by Selma Goldsmith, Joan Robinson, Wladimir Woytinsky, and others as well.[5] Recurringly, economists have been reminded that

> "Following Joan Robinson's stricture that it is most important not to apply theories obtained from the analysis of differences to situations of change (or at least to be aware of the act of faith involved in doing this) modern writers have usually been most careful to stress that their analysis is essentially

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5. Alfred Marshall clearly distinguished between static and dynamic measures and concepts. When, he wrote, "we take a man as he is, without allowing time for any change... the marginal utility of a thing to him diminishes steadily with every increase in his supply." This principle, he warns, is only contingently valid. "There is an implicit condition in this law which should be made clear. It is that we do not suppose time to be allowed for any alteration in the character or tastes of the man himself. It is therefore no exception to the law that the more good music a man hears, the stronger is his taste for it likely to become... (In this latter instance) our observations range over some period of time; and the man is not the same at the beginning as at the end of it." (Alfred Marshall, Principles of Economics, eighth Edition, MacMillan and Co., Limited, London, 1946, p. 94). Mrs. Goldsmith noted that longitudinal analysis--in which the histories of the identical individuals are traced for a succession of years--is the appropriate means of measuring change. "When we compare income shares of a given quintile... in two periods," she wrote, "we are not comparing what has happened to an identical group of families, because the families comprising the quintile may be quite different in the two periods..." In interpreting the change in the income share of the top quintile (for example), ... over say a five-to-ten-year time span, it would be extremely helpful to know the extent to which the families comprising the top sector differed in the terminal periods." (Selma Goldsmith, "Changes in the Size Distribution of Income," American Economic Review, May 1957, p. 511). Woytinsky was aware that longitudinal analysis of earnings would disclose changes which would differ substantially from findings based on cross-sectional wage data. Writing in 1943, he suggested that if "it were possible to follow the record of real earnings of an average man throughout his whole lifetime... his earnings history would show ups and downs very different from those of the recorded trend in prevailing level of wages..." W.S. Woytinsky, "Income Cycle in the Life of Families and Individuals," Social Security Bulletin, June 1943 p. 8.

> the comparison of different... situations one with another and that they are not analyzing processes."[6]

For the measurement of the change in earning capacity, the conceptual and methodological consequences of this central distinction are immense. They affect our understanding of the process of change, and the validity and interpretation of all assessments of such changes. This is true primarily because the longitudinal measures needed for the analysis of the change in earnings require that we view earning levels at any given moment of time within the context of a continuous series of changes which have occurred in the past, and which will proceed into the future.

Earning Patterns and Earning Levels (Table 1)

The insights into the process of change which such a time perspective permits--and the longitudinal measures required to understand that process--may be demonstrated by an analysis of the actual earning histories of more than 5,200 men and women in the 1958-69 period. Initially, let us consider the earnings of more than 1,900 of them. All were twenty to twenty-four years of age in 1964, all participated in the 1964 MDTA Institutional training program, and all were either RISERS or MIXERS during the 1958-62 base period. (See Chart 1.)

For both pattern groups, average annual earnings as disclosed by their Social Security records were well belwo the maximum taxable earnings limit in each year during the 1958-62 base period. These specially selected histories also reveal one additional characteristic. In each of the years of the base period, average annual earnings of the RISERS were very much lower than those of MIXERS. In 1965-69, however, (and in each year of the period), there was a drastic reversal of positions. The RISERS earned from 1.7 to 6.7 times as much

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6. G.C. Harcourt, "Some Cambridge Controversies on The Theory of Capital." Journal of Economic Literature, June 1969, p. 387.

CHART 1

PATTERNS OF THE RISERS AND THE MIXERS, 1958-62

Pattern 1958-62	1958	1959	1960	1961	1962	1965-69
			MALE WHITE			
R	$ 89	$ 269	$ 578	$1011	$1740	$29,453
M	562	1262	1945	2377	2579	17,121
R/M	.158	.213	.297	.425	.676	1.720
			MALE NEGRO			
R	$ 49	$ 174	$ 460	$ 813	$1585	$26,120
M	481	1462	2150	2404	2056	10,774
R/M	.102	.119	.214	.338	.771	2.424
			FEMALE WHITE			
R	$ 14	$ 47	$ 180	$ 556	$1443	$17,753
M	286	940	1832	1973	2010	2,656
R/M	.049	.050	.098	.281	.718	6.684
			FEMALE NEGRO			
R	$ 7	$ 38	$ 125	$ 335	$1194	$17,668
M	643	883	1007	1672	1683	3,498
R/M	.013	.043	.124	.200	.709	5.051

as the MIXERS.

The earning histories of these 1,900 youthful RISER and MIXER trainees are summarized in Table 1, as are those of 3,300 additional trainees who were twenty-five to fifty-nine years of age in 1964. In all these instances, average annual earnings of the RISERS were lower than those of the MIXERS in each year of the 1958-62 period. And in each year of the 1965-69 period, RISER earnings exceeded those of the MIXERS.

Conventional cross-sectional analysis cannot account for this drastic reversal of earnings of the RISERS and MIXERS. Primarily, this is true because it isolates the earning level at a given moment of time from the continuing process of change of which it is a product. Viewed longitudinally, however, the turnaround is neither exotic nor surprising, and is readily understandable.

Initially, it is useful to think of the earning histories of these RISERS and MIXERS in terms of earning differentials. For each of the age groups, the R/M line indicates that despite their lower earnings in 1958-62, RISERS were increasing their earnings at a faster rate than the MIXERS. Among the twenty to twenty-four-year-old female blacks, for example, RISERS earned 1% as much as MIXERS in 1958, 4% as much in 1959, 12% as much in 1960, 20% as much in 1961, and 71% as much in 1962. The identical erosion of the RISER-MIXER differential also occurred among the trainees in each of the seven older age groups. And in each of these instances, too, in 1965-69, RISER earnings exceeded those of the MIXERS by substantial amounts.

Continuity of Change: The CER (Table 2)

The earning patterns of these men and women may be conveniently indexed by their respective rates of earning cumulation during 1958-62. For each age group, the Cumulative Earning Rate for the period--the CER--was very much higher for RISERS than MIXERS. This was

TABLE 1

SELECTED 1964 MDTA-INSTITUTIONAL TRAINEES WHO WERE RISERS OR MIXERS IN 1958-62: THE 1958-62 CER AND THE CHANGE IN EARNINGS FROM 1958 TO 1965-69

AGE IN 1964	PATTERN 1958-62	CER 1958-62	1958	1958-62	1965-69	1965-69 ÷ 1958	CER 1958-62	1958	1958-62	1965-69	1965-69 ÷ 1958	CER 1958-62	1958	1958-62	1965-69	1965-69 ÷ 1958	CER 1958-62	1958	1958-62	1965-69	1965-69 ÷ 1958
Total			MALE WHITE					MALE NEGRO					FEMALE WHITE					FEMALE NEGRO			
20-24	R	60.427	$ 89	$ 3681	$29,453	330.932	61.877	$ 49	$ 3081	$26,120	533.061	159.000	$ 14	$ 2240	$17,753	1268.071	241.714	$ 7	$ 1699	$17,668	2524.000
	M	14.524	562	8725	17,121	30.466	16.781	481	8553	10,774	22.399	23.618	286	7041	2,656	9.287	8.157	643	5888	3,498	5.440
	R/M		.158	.423	1.720			.102	.360	2.424			.049	.318	6.684			.011	.288	5.050	
25-29	R	8.984	707	7059	29.742	42.068	10.118	484	5381	26,178	54.087	18.859	191	3791	17,472	91.476	20.987	163	3584	18,101	111.049
	M	5.549	1609	10539	15,710	9.763	6.031	1429	10054	12,693	8.882	5.296	1418	8928	5,503	3.881	6.236	1193	8633	7,464	6.256
	R/M		.439	.670	1.893			.339	.535	2.062			.135	.425	3.175			.137	.415	2.425	
30-34	R	21.616	146	3302	22,160	151.180	35.180	50	1809	22,734	454.680	21.619	120	2723	19,723	164.358	12.893	234	3251	19,103	81.637
	M	4.637	1841	10378	12,533	6.807	4.826	1732	10093	10,919	5.784	5.024	1615	9730	6,572	4.069	5.455	1405	9067	5,411	3.851
	R/M		.079	.318	1.768			.029	.179	2.269			.074	.280	3.001			.166	.359	3.530	
35-39	R	40.853	68	2846	21,832	321.059	7.733	442	3860	17,704	40.054	37.682	63	2437	20,041	318.111	1203.500	2	2409	19,041	9520.000
	M	4.075	2054	10426	10,424	5.080	1.859	2053	9977	9,148	4.456	4.350	1748	9352	6,492	3.714	4.334	1807	9639	4,368	2.417
	R/M		.033	.273	2.094			.215	.387	1.935			.036	.261	3.087			.001	.250	4.159	
40-44	R	14.066	288	4339	21,583	74.941	9.455	167	1746	22,047	132.018	20.031	128	2692	18,983	148.304	92.130	92	3048	16,560	180.000
	M	4.063	3072	15553	12,219	3.978	4.177	1760	9112	7,786	4.423	4.506	1648	9075	5,732	3.478	4.971	1810	10807	6,280	3.470
	R/M		.094	.279	1.766			.094	.192	2.832			.078	.297	3.312			.051	.282	2.637	
45-49	R	9.178	343	3491	23,395	68.207	13.063	111	1561	17,234	155.261	59.767	43	2613	18,261	424.674	8.094	603	5484	19,286	31.983
	M	3.246	2124	9826	7,852	3.697	4.1[illegible]	1944	10110	8,358	4.299	4.778	1769	10222	6,353	3.591	3.537	2376	10781	7,284	3.066
	R/M		.161	.355	2.979			.057	.154	2.062			.024	.256	2.874			.254	.509	2.648	
50-54	R	13.773	287	4240	19,221	66.972	9.110	299	1023	13,695	45.803	16.113	202	3457	16,811	83.223	8.277	418	3878	12,191	29.165
	M	3.696	2180	10238	7,414	3.401	3.657	2260	10528	5,304	2.347	4.437	1800	9786	6,540	3.633	3.932	2228	10990	3,991	1.791
	R/M		.132	.414	2.593			.132	.287	2.582			.112	.353	2.570			.188	.353	3.055	
55-59	R	10.869	382	4534	18,098	47.377	11.232	392	4795	11,634	29.678	17,487	230	4252	20,773	—	—	—	—	—	—
	M	4.006	3131	15673	9,489	3.030	4.737	2654	15366	9,336	3.517	4.022	2[illegible]	10616	5,780	—	—	—	—	—	—
	R/M		.122	.289	1.907			.148	.314	1.246			.10[illegible]	.400	3.594						

TABLE

SELECTED 1964 MDTA INSTITUTIONAL TRAINEES WHO WERE RISERS OR MIXERS IN 1958-62: THE 1958-62 CUMULATIVE EARNING RATE AND THE CHANGE IN EARNINGS, 1958 TO 1965-69

AGE IN 1964	PATTERN 1958-62	CER 1958-62	1965-69 ÷ 1958	CER 1958-62	1965-69 ÷ 1958	CER 1958-62	1965-69 ÷ 1958	CER 1958-62	1965-69 ÷ 1958	r=*
		MALE WHITE		MALE NEGRO		FEMALE WHITE		FEMALE NEGRO		
20-24	R	40.427	330.932	61.877	533.061	159.000	1268.071	241.714	2524.000	.991
	M	14.524	30.466	16.781	22.399	23.618	9.287	8.157	5.440	
25-29	R	8.984	42.068	10.118	54.087	18.859	91.476	20.987	111.049	.982
	M	5.549	9.763	6.031	8.882	5.296	3.881	6.236	6.256	
30-34	R	21.616	151.780	25.160	120.635	21.619	164.358	12.893	81.637	.954
	M	4.637	6.807	4.826	5.784	5.024	4.069	5.455	3.851	
35-39	R	40.853	321.059	7.733	40.054	37.682	318.111	1203.500	9520.000	.999
	M	4.075	5.080	3.859	4.456	4.350	3.714	4.334	2.417	
40-44	R	14.066	74.941	9.455	132.018	20.031	148.304	32.130	180.000	.885
	M	4.063	3.978	4.177	4.423	4.506	3.478	4.971	3.470	
45-49	R	9.178	68.207	13.063	155.261	59.767	424.674	8.094	31.983	.979
	M	3.626	3.697	4.198	4.299	4.778	3.591	3.537	3.066	
50-54	R	13.773	66.972	9.110	45.803	16.113	83.223	8.277	29.165	.993
	M	3.696	3.401	3.657	2.347	4.437	3.633	3.932	1.791	
55-59	R	10.869	47.377	11.232	29.678	17.487	90.317	-	-	.973
	M	4.006	3.030	4.737	3.517	4.022	2.734			
		r= .987 Sig 1%		r= .947 Sig 1%		r= .991 Sig 1%		r= .997 Sig 1%		

*Sig at 1% unless otherwise indicated

true despite the lower annual earning levels of the RISERS in each year of the period.

If, as our thesis suggests, the change in earnings is a continuous and consistent process, then the 1958-62 CER should be measurably related to the change in earnings from 1958 to 1965-69. And indeed, the correlation coefficients do reveal a statistically significant relationship between these two variables for each sex-race group as a whole (r varies from .94 to .99). At least 88% of the change in earnings from 1958 to 1965-69 may be explained by the rate of earning cumulation in the 1958-62 base period.

While this holds true for each sex-race group (two paired observations for the eight age cohorts) the relationship is equally firm within each age group, when the eight paired observations are coalesced and the sex and race designations are ignored. For the twenty to twenty-four year olds, for example, more than 98% of the change in earnings from 1958 to 1965-69 may be explained by the CER in 1958-62. And that relationship is also significant for each of the successively older age groups, as shown in Table 2.

Earning Patterns and Employment Changes

Traditionally, economic data on employment and earnings are published on a dichotomous basis. The Bureau of Labor Statistics and the Bureau of the Census, for example, publish one set of data on employment, and another on earnings.

Consistent with this convention, I shall consider first the change in man years of employment, and the principles which appear to govern such changes.

Throughout the discussion, primary reliance will be placed on an analysis of the labor market experiences of a 0.1% sample of 49,245,000 members of the Social Security Administration's Continuous Work History Sample (CWHS)--a random sample of individuals with earnings of $1 or more in 1964 from jobs covered by the Social

Security system. To further test the validity of my hypothesis, I shall also refer to CWHS data for other time periods, and to the histories of participants in a number of training programs for the same time periods as well.

The employment changes of these individuals may be described conveniently in the form of an Employment Ratio (ER). This measure reflects the ratio of man years of gainful employment to the number of calendar years in a given span of years. During a period of five calendar years, for example, individuals with earnings in two years have an ER of .4000 (2/5); in three years, an ER of .6000 (3/5); in four years, an ER of .8000 (4/5); and so on. The ER measure, therefore, is consistent with the pattern concept, since it is affected adversely or positively by the continuity of man years of gainful employment during any given span of years.

CWHS: ER Changes (Table 3)

The employment history summaries of the 49,000 CWHS members are of interest for several reasons. While restricted to employment covered by Social Security, they are remarkably consistent with respect to the experiences of both men and women, whether white or black. Unlike Tables of Working Life which assume the absence of change from entry into the labor force to retirement, the experience of all the CWHS members indicates that changes in the level of employment do occur during the aging process.

When classified by earning patterns in 1958-62--RISERS, MIXERS, and DECREASERS--these changes are also marked by a singular symmetry. Among those twenty to twenty-four years of age in 1964, for example, there is a marked difference between the 1958 and 1958-62 ER level of RISERS and MIXERS. Throughout the 1958-62 base period, the RISER men and women of each race had fewer man years of employment than the MIXERS. In 1965-69, however, one witnesses a reversal in position. The ER of the RISERS exceeds that of the MIXERS, a

TABLE 3

TABLE 3 - CWHS MEMBERS WHO WERE RISERS, MIXERS, OR DECREASERS DURING 1958-62: THE 1958-62 CUMULATIVE EARNING RATE AND THE CHANGE IN MAN YEARS OF EMPLOYMENT (ER) FROM 1958 TO 1965-69, BY SEX, RACE AND AGE IN 1964

AGE IN 1964	PATTERN 1958-62	Number	CER 1958-62	1958	1958-62	1965-69	1965-69 ÷ 1958	Number	CER 1958-62	1958	1958-62	1965-69	1965-69 ÷ 1958	Number	CER 1958-62	1958	1958-62	1965-69	1965-69 ÷ 1958	Number	CER 1958-62	1958	1958-62	1965-69	1965-69 ÷ 1958
		N= 29 849		MALE WHITE				N= 3388		MALE NEGRO				N= 14084		FEMALE WHITE				N= 1924		FEMALE NEGRO			
Total																									
20-24	R	2677	1.196	.2450	.6242	.9604	3.920	326	58.840	.1411	.5392	.9429	6.682	1521	62.891	.1464	.5424	.7213	4.926	148	55.352	.0743	.4040	.8148	10.996
	M	1863	3.625	.5373	.8030	.9480	1.764	206	13.118	.4660	.7524	.9252	1.985	986	13.931	.4604	.7146	.6987	1.517	103	24.614	.3106	.6155	.7825	2.519
	D	24	1.603	1.0000	.5916	.8416	.842	7	1.638	1.0000	.5142	.8571	.857	23	0.596	.9130	.4956	.5565	.607	3	1.069	1.0000	.5333	.7333	.733
25-29	R	1655	7.238	.8785	.9440	.9789	1.114	179	7.788	.7430	.8871	.9664	1.300	562	8.076	.5978	.7701	.7793	1.303	77	13.105	.3506	.6753	.9090	2.592
	M	2401	5.559	.9250	.9430	.9486	1.025	330	5.866	.8787	.9115	.9206	1.047	981	4.896	.8287	.8440	.7388	.891	196	5.587	.7448	.8061	.8612	1.156
	D	49	1.590	1.0000	.6755	.8326	.833	10	0.757	1.0000	.4800	.9200	.920	98	1.010	1.0000	.4775	.6959	.696	17	2.504	1.0000	.6941	.6823	.682
30-34	R	2122	5.381	.9344	.9705	.9788	1.047	175	5.990	.8628	.9314	.9611	1.113	504	6.888	.5376	.7313	.8488	1.578	94	10.291	.4042	.6617	.8510	2.105
	M	1638	4.223	.9407	.9434	.9427	1.002	312	4.845	.9102	.9205	.9326	1.024	825	4.554	.7866	.8363	.8070	1.025	148	4.774	.8040	.8243	.8094	1.006
	D	45	1.892	1.0000	.6888	.8488	.849	15	2.344	1.0000	.8133	.7733	.773	71	0.802	1.0000	.4676	.6788	.679	8	1.313	1.0000	.5500	.5000	.500
35-39	R	2430	4.819	.9621	.9808	.9819	1.021	160	5.402	.8562	.9137	.9700	1.132	691	6.440	.5484	.7470	.8862	1.615	96	7.281	.5416	.7416	.9166	1.692
	M	1496	4.393	.9438	.9436	.9352	.991	297	4.734	.9437	.9441	.9131	.968	942	4.832	.7993	.8562	.8556	1.070	172	4.664	.8081	.8581	.8662	1.071
	D	52	1.920	1.0000	.7192	.8153	.815	10	1.815	1.0000	.6600	.8600	.860	71	0.980	1.0000	.5267	.7211	.721	11	1.821	1.0000	.6363	.7454	.745
40-44	R	2482	4.791	.9621	.9827	.9753	1.014	154	5.000	.8896	.9246	.9545	1.072	863	6.376	.5990	.7828	.9068	1.513	95	6.431	.5894	.7915	.8673	1.471
	M	1446	4.299	.9412	.9445	.9208	.978	270	4.654	.9333	.9511	.9111	.976	992	4.707	.8417	.8868	.8546	1.015	149	4.846	.8389	.8979	.8456	1.007
	D	45	2.116	1.0000	.7777	.8088	.809	20	2.682	1.0000	.7300	.8700	.870	63	1.494	1.0000	.6380	.7269	.727	24	1.982	1.0000	.6333	.7750	.775
45-49	R	2199	4.745	.9630	.9806	.9675	1.005	137	5.099	.9270	.9664	.9343	1.007	849	5.989	.6725	.8247	.9062	1.347	119	5.873	.5461	.7075	.8773	1.606
	M	1404	4.221	.9458	.9450	.9118	.964	226	4.389	.9159	.9415	.8973	.979	904	4.560	.8539	.9033	.8402	.983	112	4.551	.8839	.8964	.8482	.959
	D	39	2.023	1.0000	.8051	.7743	.774	19	1.622	.9473	.6526	.7368	.778	55	2.094	.9818	.6109	.7200	.733	15	2.527	1.0000	.6933	.7466	.747
50-54	R	1860	4.764	.9580	.9798	.9549	.997	114	4.928	.8859	.9421	.9508	1.073	796	5.535	.7211	.8469	.9030	1.252	85	5.805	.6470	.8254	.8894	1.374
	M	1272	4.218	.9488	.9482	.8949	.943	188	4.376	.8404	.8529	.8345	.992	832	4.441	.8744	.9096	.8473	.965	99	4.167	.8787	.8787	.8060	.917
	D	48	2.101	1.0000	.7500	.7708	.771	21	1.225	1.0000	.7523	.6380	.638	55	1.936	1.0000	.7090	.6800	.680	21	2.194	1.0000	.7904	.7142	.714
55-59	R	1472	4.759	.9540	.9763	.9263	.971	71	4.920	.8591	.9380	.8647	1.006	649	5.211	.7784	.8105	.8644	1.122	58	5.665	.5689	.7379	.8241	1.448
	M	1101	4.144	.9398	.9404	.8653	.921	131	4.219	.8854	.9236	.8687	.981	705	4.491	.8907	.9171	.8286	.930	67	3.635	.9104	.9223	.7970	.875
	D	48	2.189	1.0000	.8083	.7291	.729	10	1.780	1.0000	.8000	.7200	.720	44	2.336	1.0000	.7772	.6818	.682	7	1.885	1.0000	.6285	.7428	.742

turnaround we have discussed in another connection earlier in this paper. And while the number of twenty to twenty-four-year-old DECREASERS is quite small, it is noteworthy that while their ER exceed that of the RISERS and MIXERS in 1958, for the 1958-62 period as a whole, and in 1965-69 as well, it is substantially lower than that of the two other pattern groups. And while some recovery does occur in 1965-69, the DECREASERS do not regain their initial advantage in employment.

The most significant characteristics of these histories is the congruence between the earning pattern during 1958-62 and the change in ER from 1958 to 1965-69. In each of the eight age groups, the RISER Cumulative Earning Rate exceeds that of the MIXERS, which in turn exceeds that of the DECREASERS. Interestingly, the rank order of change in ER from 1958 to 1965-69 is completely consistent with this array. The change in employment is most favorable for RISERS less favorable for MIXERS, and least favorable for DECREASERS.

It is true, of course, that the CER is generally lower for each successively older age group, but so too is the change in employment. What is particularly striking is that this consistency marks both the positive and negative employment changes. Among older workers, for example, MIXER employment declines to a lesser degree than that of DECREASERS, as for example, in the forty and older age groups:

Institutional Trainees: ER Changes (Table 4)

This summary of one of the principle characteristics of the employment changes of the CWHS members reveals the existence of differential or structured rates of change which characterize various age groups in the labor force, and of different segments within each age group. That CWHS RISERS may increase their ER, while the employment of MIXERS and DECREASERS changes negatively, suggests that the aging process is not monolithic, but affects employability with a certain consistency of effect.

TABLE 4

TABLE 4: CWHS MEMBERS AND 1964 MDTA INSTITUTIONAL COMPETERS AND NONCOMPLETERS

WHO WERE RISERS, MIXERS, OR DECREASERS IN 1958-62:

THE CORRELATION BETWEEN THE 1958-62 CER AND THE CHANGE IN MAN YEARS OF EMPLOYMENT (ER) FROM 1958 TO 1965-69

AGE IN 1964	PATTERN 1958-62	MALE WHITE: CWHS CER 1958-62	CWHS 1965-69 : 1958	COMPLETERS CER 1958-62	COMPLETERS 1965-69 : 1958	NONCOMPLETERS CER 1958-62	NONCOMPLETERS 1965-69 : 1958	MALE NEGRO: CWHS CER 1958-62	CWHS 1965-69 : 1958	COMPLETERS CER 1958-62	COMPLETERS 1965-69 : 1958	NONCOMPLETERS CER 1958-62	NONCOMPLETERS 1965-69 : 1958
20-24	R	11.196	3.970	[illegible].729	6.881	9.412	5.307	10.080	6.607	55.876	7.559	16.495	7.960
	M	11.675	1.764	5.708	1.960	5.018	1.978	11.110	1.905	16.045	7.486	20.786	2.471
	D	1.603	.842	0.674	1.036	1.399	1.014	1.630	.857	7.151	1.000	1.415	1.050
25-29	R	7.230	1.114	0.777	1.171	0.715	1.777	7.760	1.000	10.175	1.177	11.600	1.165
	M	5.[illegible]	1.025	5.500	1.019	5.571	1.052	5.866	1.047	5.579	1.000	5.797	.974
	D	1.[illegible]	.833	1.731	.859	1.521	.818	0.757	.920	1.450	.851	1.155	.769
30-34	R	5.181	1.067	6.700	1.181	5.915	1.715	5.990	1.111	7.029	1.707	7.650	1.160
	M	4.771	1.002	4.671	1.102	4.604	.967	4.065	1.024	4.786	1.012	5.197	1.021
	D	1.097	.849	1.586	.800	1.451	.760	2.164	.771	1.079	.801	7.111	.730
35-39	R	4.019	1.071	5.301	1.135	5.581	1.110	5.4[illegible]	1.112	6.576	1.647	7.511	2.000
	M	4.301	.991	4.199	1.041	4.579	.965	4.746	.960	[illegible]	1.019	4.110	.931
	D	1.920	.815	1.616	.830	1.730	.967	1.015	.860	[illegible]	.828	1.057	.914
40-44	R	4.791	1.016	5.170	1.091	5.703	1.075	5.000	1.077	6.707	1.777	5.118	.757
	M	4.799	.970	4.110	.900	4.190	.944	4.614	.976	4.717	.982	4.755	1.041
	D	2.116	.809	1.704	.770	1.562	.860	7.607	.870	1.775	.705	0.304	.800
45-49	R	4.745	1.005	5.007	.977	5.715	1.096	5.094	1.007	6.4[illegible]	1.554	-	
	M	4.221	.964	4.071	.960	4.041	.880	4.309	.979	3.9[illegible]	.926	5.771	1.000
	D	2.021	.776	1.176	.677	1.600	.900	1.627	.778	1.071	.778	1.051	.767
50-54	R	4.764	.997	5.790	1.117	5.100	1.053	4.920	1.071	5.717	1.500	-	
	M	4.210	.967	4.041	.932	4.030	.896	4.176	.992	1.956	.964	4.067	.763
	D	2.101	.775	1.757	.735	1.027	.600	1.275	.630	1.152	.636	1.886	.600
55-59	R	4.759	.975	5.907	1.077	4.955	1.041	4.970	1.006	16.164	7.600	-	-
	M	4.144	.921	4.077	.876	4.090	.894	4.239	.981	1.690	1.015	-	-
	D	2.109	.729	2.109	.670	1.741	.725	1.700	.770	2.600	.600	-	-

AGE IN 1964	PATTERN 1958-62	FEMALE WHITE: CWHS CER 1958-62	CWHS 1965-69 : 1958	COMPLETERS CER 1958-62	COMPLETERS 1965-69 : 1958	NONCOMPLETERS CER 1958-62	NONCOMPLETERS 1965-69 : 1958	FEMALE NEGRO: CWHS CER 1958-62	CWHS 1965-69 : 1958	COMPLETERS CER 1958-62	COMPLETERS 1965-69 : 1958	NONCOMPLETERS CER 1958-62	NONCOMPLETERS 1965-69 : 1958	FOUR SEX RACE GROUPS
20-24	R	17.891	6.976	100.975	9.830	167.856	11.741	55.352	10.996	196.516	20.057	225.960	10.857	r= .967
	M	11.911	4.517	16.065	1.910	18.751	2.112	26.614	2.519	20.562	3.085	28.176	1.177	
	D	0.596	.609	0.825	.811	0.525	.675	1.068	.731	0.750	.757	0.150	1.066	
25-29	R	8.076	1.301	10.930	2.519	11.330	1.905	13.105	2.592	17.210	2.705	25.747	1.000	r= .978
	M	4.896	.891	5.099	1.067	4.690	.807	5.507	1.156	5.750	1.164	5.807	1.156	
	D	1.010	.696	0.606	.764	0.735	.511	2.306	.682	1.014	.710	0.606	.705	
30-34	R	6.800	1.570	9.551	2.511	29.417	3.401	10.291	2.105	11.961	2.469	9.714	1.781	r= .867
	M	4.544	1.075	4.774	1.111	4.991	1.057	4.774	1.006	4.970	1.116	6.160	.940	
	D	0.862	.679	0.760	.758	0.652	.560	1.313	.500	1.313	.809	0.869	.557	
35-39	R	6.440	1.615	11.211	2.9[illegible]	0.457	2.400	1.781	1.692	9.615	2.200	10.296	1.000	r= .896
	M	4.017	1.078	4.771	1.144	4.916	1.078	4.664	1.071	4.510	1.076	1.757	.941	
	D	0.900	.771	1.731	.756	1.094	.611	1.021	.765	1.477	.751	1.281	.650	
40-44	R	6.176	1.511	9.761	2.807	9.307	2.577	6.411	1.471	8.790	1.510	11.671	2.650	r= .844
	M	4.707	1.015	4.877	1.118	4.585	.967	4.846	1.007	5.730	1.171	1.357	.805	
	D	1.494	.727	0.755	.705	0.854	.660	1.902	.775	0.996	.717	0.541	.567	
45-49	R	5.999	1.167	8.358	2.130	7.474	1.411	5.071	1.606	9.606	1.911			r= .877
	M	4.560	.983	4.705	1.086	4.586	.978	4.551	.959	4.335	.990	1.615	1.000	
	D	2.094	.731	1.252	.822	-	-	2.527	.767	1.273	.947			
50-54	R	5.515	1.252	7.261	1.890	0.055	1.300	5.005	1.374	6.004	1.656			r= .871
	M	4.441	.965	4.877	1.069	4.906	.961	4.167	.917	3.919	1.274			
	D	1.926	.600	1.633	.868	1.991	.637	2.194	.714	-				
55-59	R	5.231	1.177	6.915	1.666	10.807	[illegible].531	5.665	1.440			-	-	r= .920
	M	4.491	.930	4.151	.905	4.101	[illegible].026	9.615	.875	3.606	.974	-	-	
	D	2.330	.602	1.385	.837	1.685	.771	1.005	.742	-		-	-	

CORRELATION COEFFICIENTS[1/] 1958-62 CER and CHANGE FROM 1958 TO 1965-69

	MW CWHS	MW Completers	MW Noncompleters	MN CWHS	MN Completers	MN Noncompleters	FW CWHS	FW Completers	FW Noncompleters	FN CWHS	FN Completers	FN Noncompleters
ALL AGES	.779	.996	.991	.997	.981	.980	.979	.971	.977	.982	.993	.971
[illegible]	-	.986	.989	-	.982	.987		.967	.976	-	.977	.964

1/ Significant at 1% level, unless otherwise indicated.

The analytical role of pattern, the CWHS histories suggest, is to permit the classification of labor market histories into meaningful categories of change. Thus, although the CWHS members were all employed in 1964, the 39,792 men and women participants in the 1964 MDTA Institutional training program were largely unemployed in the period preceding their entry into the program. While a more precise statement concerning their employment status cannot be made, most analysts agree that the CWHS histories as a whole are upwardly biased, while those of the Institutional trainees are skewed negatively. In addition, some analysts have suggested that the men and women CWHS members are better educated and higher paid than the disadvantaged and unemployed trainees, and that the histories of the two groups are simply not comparable.

When disaggregated and classified by earning patterns in 1958-62, however, the process underlying the employment changes of both the trainees and the CWHS members is seen to be identical. The trainee histories are shown separately for those who did and did not complete their training. In each of eight age groups of these men or women of either race, the symmetry between the 1958-62 CER and the change in employment is apparent. The larger the rate of earning cumulation in the base period, the more favorable is the change in man years of employment.

The Continuity of Change (Table 4)

The ubiquity of this symmetry suggests an underlying relationship between the 1958-62 CER of the various pattern groups, and the change in employment from 1958 to 1965-69. And indeed, these two variables are closely and significantly correlated. Three aspects of that relationship are particularly noteworthy. The CER-ER change relationship is significantly correlated not only for the CWHS members, but for the Institutional Completers and Non-Completers as well. As the correlation coefficients at the foot of Table

4 indicate, this holds true not only for the CWHS, Completer, and Noncompleter samples considered independently, but also when the Completer or Noncompleter paired observations are coalesced with those of the CWHS members. The correlation coefficients remain significant and substantially unchanged.

The third, and probably the most important aspect of that relationship, is revealed by the correlation coefficients for each age group, when the CWHS, Completer and Noncompleter paired observations are coalesced without regard to sex or race. For each of the eight age groups, the coefficients reveal a persistent and pervasive relationship between the rate of earning cumulation in 1958-62 and the change in man years of employment from 1958 to 1965-69. From 75% to 93% of the change in employment of the age groups may be explained by the rate of earning cumulation in 1958-62.

The case of the twenty to twenty-four-year-olds in 1964 is particularly striking. Because their employment histories are traced from 1958 to 1969, the 1958-62 CER reflects their labor market experience six years earlier, when they were fourteen to eighteen years old, and ends five years later, when they were twenty-five to twenty-nine years old. As might be expected, the rates of earning cumulation reflect their rapid absorption into the labor market. And despite the very great disparity between the white and black CER of each sex, and between the CER of the CWHS and trainee samples, the relationship between the CER and the ER change is clearly evident. More than 93% of the change can be attributed to the rate of earning cumulation in the base period.

Earning Patterns and Earning Changes

As might be expected, the earning histories of the CWHS members and the trainees parallel their changes in man years of employment, and reveal the same congruence between the rate of earning cumulation in 1958-62 and the change in earnings from 1958 to 1965-69.

CWHS Earning Changes (Table 5)

The earning histories of the CWHS members reveal the same symmetry between the CER in 1958-62 and the change in earnings that characterized their employment. Within each sex-race group as a whole, and in each age group as well, RISERS, MIXERS, and DECREASERS cumulate earnings at successively lower rates, a rank order which is consistently accompanied by respectively lower changes in earnings from 1958 to 1965-69. And, as in the case of their employment changes, the change in earnings of the CWHS members is age-related. The older the group, the lower is the 1958-62 CER, and the lower is the change in earnings from 1958 to 1965-69.

Trainer Earning Changes (Table 6)

A comparison of the dynamics of the change in earnings reveals the presence of the same underlying forces in the earning histories of the 1964 Institutional Completers and Noncompleters. And as indicated at the foot of Table 6, the correlation between the rate of earning cumulation during 1958-62, and the change in earnings from 1958 to 1965-69, is as strong and as significant for the Institutional trainees as for the CWHS members. Whether one examines the earning changes of the CWHS members, the Institutional Completers or Non-Completers, regardless of sex or race, at least 90% of the change in earnings from 1958 to 1965-69 may be attributed to the rate of earning cumulation during 1958-62.

And as in the case of the change in ER, the paired observations for the coalesced CWHS and trainee groups as a whole reveal a virtually unchanged set of correlation coefficients. This is also true for each age group, when we test the relationship between the CER during 1958-62 and the change in earnings. The correlation coefficients in each instance reveal a firm and stabel relationship between these two variables.

This section of the paper has considered the changes in employment and earnings of some 89,000 individuals--more than 49,000 CWHS members and some 40,000 Institutional trainee Completers and Non-Completers--during the 1958-69 period. And although their respective employment and earning levels differed, we discovered a process of change which was common to them all.

TABLE 5

TABLE 5 - CWHS MEMBERS WHO WERE RISERS, MIXERS OR DECREASERS DURING 1958-62:

THE 1958-62 CUMULATIVE EARNING RATE AND THE CHANGE IN EARNINGS FROM 1958 TO 1965-69, BY SEX, RACE AND AGE IN 1964

MALE WHITE — TOTAL N = 29849

AGE IN 1964	PATTERN 1958-62	Number	CER 1958-62	1958	1958-62	1965-69	1965-69 ÷ 1958
20-24	R	2677	31.196	$ 140	$ 4520	$23115	165.10
	M	1863	13.675	354	5180	22758	64.28
	D	24	1.603	567	1477	19686	34.719
25-29	R	1655	7.238	1884	15524	28873	15.325
	M	2401	5.559	1712	11230	25140	14.685
	D	49	1.590	1944	5036	16708	8.595
30-34	R	2122	5.381	3142	20052	30257	9.630
	M	1638	4.721	2450	14027	21996	9.794
	D	45	1.892	1993	5767	16412	8.234
35-39	R	2430	4.819	3707	21574	30783	8.304
	M	1496	4.393	2808	15146	23470	8.358
	D	52	1.920	2158	6302	13090	6.066
40-44	R	2482	4.791	3777	21876	30461	8.065
	M	1446	4.299	2823	14962	21977	7.785
	D	45	2.116	2531	7888	16268	6.427
45-49	R	2190	4.745	3840	22060	30214	7.873
	M	1404	4.221	2825	14754	21178	7.497
	D	39	2.023	2466	7459	10607	4.301
50-54	R	1860	4.764	3785	21823	29169	7.706
	M	1272	4.218	2829	14763	19922	7.042
	D	48	2.101	2203	6833	10801	4.903
55-59	R	1472	4.759	3741	21943	27005	7.219
	M	1101	4.144	2711	13950	17241	6.544
	D	48	2.189	2148	7776	9009	4.194

MALE NEGRO — N = 3388

AGE IN 1964	PATTERN 1958-62	Number	CER 1958-62	1958	1958-62	1965-69	1965-69 ÷ 1958
20-24	R	326	8.840	$ 50	$ 3001	$18130	376.60
	M	206	1.118	262	3709	16136	62.351
	D	7	1.638	675	1781	8916	13.209
25-29	R	179	7.748	1157	10122	23218	20.067
	M	330	5.866	1096	7528	17865	16.300
	D	10	0.757	1018	1790	16659	16.364
30-34	R	175	5.990	2074	14505	21809	11.474
	M	312	4.845	1706	9973	18358	10.760
	D	15	2.344	1628	5444	12440	7.641
35-39	R	160	5.402	2527	16181	24912	9.858
	M	297	4.734	2031	11649	19334	9.519
	D	10	1.815	1897	5340	13677	7.210
40-44	R	154	5.000	2768	16609	24308	8.781
	M	270	4.654	1654	8665	15153	9.161
	D	20	2.682	2051	7552	13497	6.581
45-49	R	137	5.099	2862	17459	23682	8.276
	M	226	4.389	2097	11305	17190	8.197
	D	19	1.622	1882	4936	10768	5.721
50-54	R	114	4.928	2679	15886	22352	8.343
	M	188	4.076	2132	11462	16774	7.867
	D	21	1.225	2073	4612	5983	2.886
55-59	R	71	4.920	2528	14967	18151	7.259
	M	131	4.219	2303	12068	15184	6.597
	D	10	1.780	2337	6498	7472	1.197

FEMALE WHITE — N = 14894

AGE IN 1964	PATTERN 1958-62	Number	CER 1958-62	1958	1958-62	1965-69	1965-69 ÷ 1958
20-24	R	1521	32.891	$ 68	$ 3698	11404	167.70
	M	986	13.931	257	3842	10618	41.315
	D	21	0.596	525	838	4308	8.206
25-29	R	562	8.076	1141	10363	15222	13.340
	M	981	6.896	1953	7978	11404	8.424
	D	98	1.010	1491	2998	9048	6.068
30-34	R	504	[illegible]	1280	10100	16580	12.953
	M	825	[illegible]	1503	8353	13081	8.703
	D	71	0.862	1646	3066	7515	4.516
35-39	R	691	6.440	1471	10947	18612	12.652
	M	942	4.832	1494	8716	14112	9.446
	D	71	0.980	1557	3085	8476	5.444
40-44	R	863	6.376	1516	11186	18804	12.403
	M	992	4.707	1666	9513	14510	8.709
	D	63	1.494	1457	3635	7968	5.469
45-49	R	849	5.999	1753	12775	18956	10.813
	M	904	4.560	1817	10105	14060	7.738
	D	55	2.094	1520	4729	10011	6.552
50-54	R	796	5.535	1987	12987	18746	9.434
	M	832	4.441	1885	10261	13691	7.263
	D	55	1.936	2101	6169	7889	3.755
55-59	R	649	5.731	2233	13915	18560	8.311
	M	705	4.491	1901	10440	12769	6.716
	D	44	2.136	1792	5980	7134	4.093

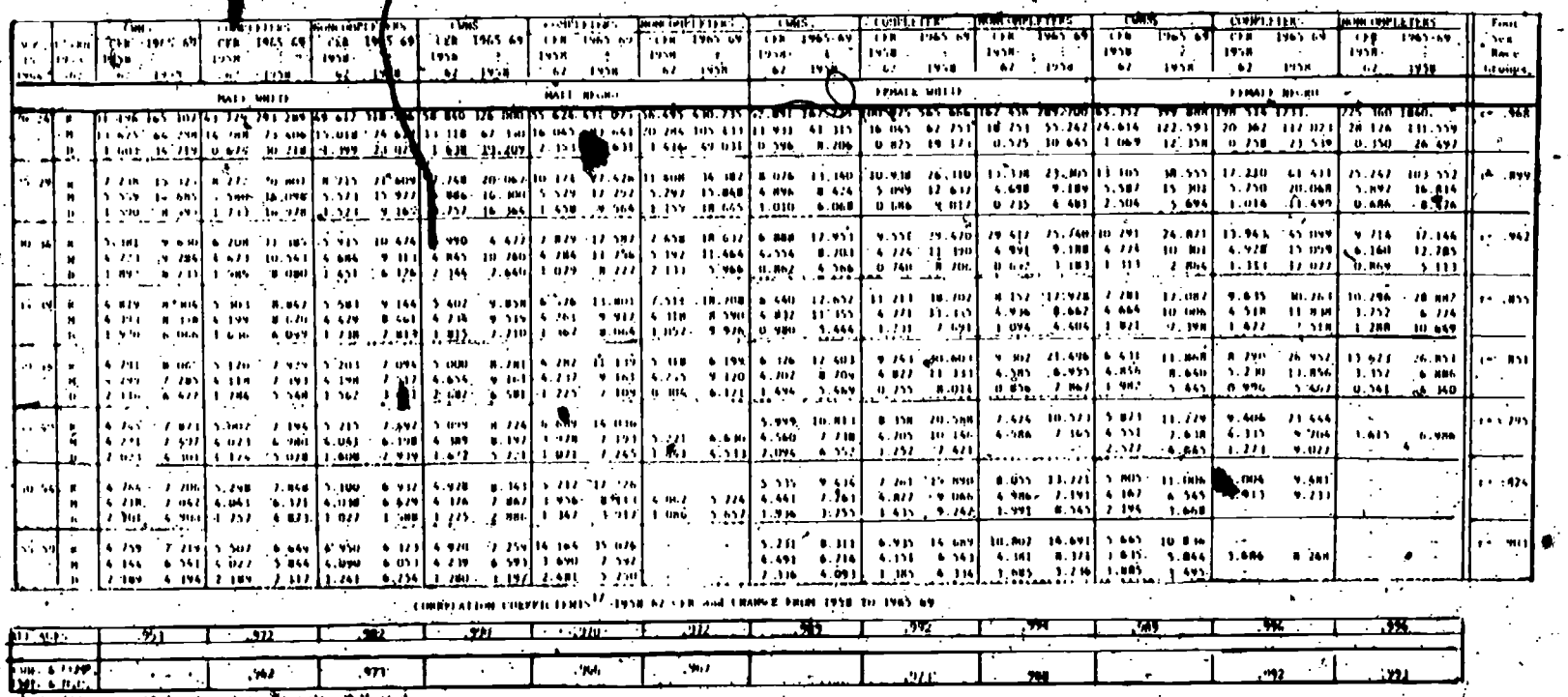
FEMALE NEGRO — N = 1924

AGE IN 1964	PATTERN 1958-62	Number	CER 1958-62	1958	1958-62	1965-69	1965-69 ÷ 1958
20-24	R	148	55.352	$ 27	$1845	$10797	399.388
	M	103	24.614	86	2211	10543	122.593
	D	3	1.069	461	955	5697	12.358
25-29	R	77	13.105	371	5245	14304	38.555
	M	196	5.587	764	5038	11690	15.301
	D	17	2.504	909	3187	5176	5.694
30-34	R	94	10.291	506	5721	12855	24.875
	M	148	4.776	1056	6097	[illegible]	10.30
	D	8	1.313	1032	2387	2956	2.86
35-39	R	96	7.281	927	7680	15840	17.087
	M	172	4.664	1207	6836	12078	10.006
	D	11	1.821	1133	3198	8382	7.398
40-44	R	95	6.431	1028	7646	12201	11.868
	M	149	4.846	1228	7181	10601	8.640
	D	24	1.982	1239	3696	6746	5.445
45-49	R	119	5.873	1081	7430	12193	11.279
	M	112	4.551	1309	7271	9999	7.638
	D	15	2.527	780	2752	5183	6.645
50-54	R	85	5.805	1147	[illegible]	12624	11.006
	M	99	4.167	1431	7395	9367	6.545
	D	21	2.194	1130	3613	4145	3.668
55-59	R	58	5.665	1046	6977	11335	10.836
	M	67	3.635	1251	5799	7312	5.844
	D	7	1.885	1364	1936	4767	3.495

TABLE 6

TABLE 6: CWHS MEMBERS AND 1964 MDTA INSTITUTIONAL COMPLETERS AND NONCOMPLETERS WHO WERE RISERS, MIXERS, OR DECREASERS IN 1958-62

THE CORRELATION BETWEEN THE 1958-62 CER AND THE CHANGE IN EARNINGS FROM 1958 TO 1966-69



Analysis of the labor market experience reflected in 113,500 earning histories of CWHS RISERS, MIXERS and DECREASERS for two other time periods, 1962-66 to 1969, and 1963-67 to 1969, serves merely to replicate our findings for the longer 1958-62 to 1965-69 period. The CER in the base periods is invariably correlated significantly with the changes in ER and earnings from the initial base year to the terminal year. The changes in employment and earnings of more than 105,000 trainees in the 1968 MDTA Institutional program, the Mainstream program, and the JOBS Contract and Non-Contract programs reveal precisely the same relationships, whether considered independently, or in conjunction with the paired observations of the CWHS groups.

In all, we have analyzed about 220,000 employment and earning histories. Change does characterize those histories, and the process is marked by a singular uniformity and consistency which reveal a continuing set of patterns of change which characterize the labor market experience during the aging process.

THE HOLISTIC NATURE OF THE CHANGE IN EARNINGS

In an earlier reference to the earning pattern concept, I have described it as reflecting the interactional effects of the totality of forces responsible for the change in earning capacity. It is this holistic characteristic of "pattern," and of the longitudinal system of analysis of which it is a component, which permits isolation and demonstration of the thread of continuity which links the past and future labor market experiences of men and women as they age.

Education As A Variable: RR and MM Trainees and CWHS Members

Nowhere is this holistic quality better illustrated than in the earning histories of the Institutional trainees when classified by years of schooling. As we shall see, the education variable is not monolithic in its effects, and by itself cannot explain why, for example, some high school dropouts have more favorable changes in earnings than high school graduates. In short, these earning histories demonstrate that education

is not an independent variable, and that it is not causitively related to earnings as implied by the careless writings of some economists. Indeed, these histories suggest that the relative significance of the education-earnings relationship changes as individuals age, and that the influence of education on earnings diminishes with increasing age.

Schooling and the RR and MM Trainees (Table 7)

The implicit assumption in Tables of Lifetime Earnings that the education-earnings relationship remains unchanged throughout a lifetime is not supported by the earning histories of 9,221 Institutional trainees.

Table 7 highlights the changes of two groups of these trainees; those who were RISERS in 1958-62 and in 1965-69 (RR), and those who were MIXERS in both instances (MM). The earning patterns of each group, therefore, remained constant from 1958 to 1969. Also held constant are the number of years of schooling. The RR group includes only high school dropouts, while the MM trainees had all graduated from high school, and some had gone on to college. The more favored RR pattern groups were thus educationally disadvantaged. The less favored MM trainees, however, were more favored educationally.

A comparison of the 1958-62 CER of each group discloses that for each sex and race, the RR high school dropouts--despite their relative disadvantage in years of schooling--were cumulating earnings at a faster rate than those MM trainees who were high school graduates. And the correlation coefficients indicate that the changes in earnings form 1958-to 1965-69, were commensurate with the rate of earning cumulation in the 1958-62 base period.

Of even greater interest are the correlation coefficients for each age group as a whole, when race and sex characteristics are disregarded. The differences between the CER of the blacks and the whites of each sex are clearly reflected in their respective CER. And change in earnings is always commensurate with the 1958-62 CER, as revealed by the correlation coefficients. The date in Table 7, therefore, reflect not only sex, race and age differences, but differences between the years of schooling of

TABLE 7: RR AND MM 1964 MDTA INSTITUTIONAL TRAINEES WITH 9-11 OR 12 YEARS OF SCHOOLING RESPECTIVELY -- THE CORRELATION BETWEEN THE 1958-62 CER AND THE CHANGE IN EARNINGS FROM 1958 TO 1965-69, BY EARNING PATTERN, 1958-62/1965-69

AGE in 1964	P'TRN 1958-62 & 1965-69	School-ing	CER 1958-62	1965-69 ÷ 1958	CER 1958-62	1965-69 ÷ 1958	CER 1958-62	1965-69 ÷ 1958	CER 1958-62	1965-69 ÷ 1958	Four Sex-Race Groups
			N=4206		N=1268		N=2451		N=1296		r**
			MALE WHITE		MALE NEGRO		FEMALE WHITE		FEMALE NEGRO		
20-24	RR	9-11	44.828	342.606	53.936	565.342	91.954	648.863	81.781	1157...	.890
	MM	12+	13.791	63.862	16.087	87.623	20.454	76.284	26.664	30.754	
25-29	RR	9-11	7.469	19.459	8.126	27.552	11.834	46.707	37.220	221.837	.998
	MM	12+	5.550	14.410	5.631	16.485	5.048	11.303	5.620	17.645	
30-34	RR	9-11	5.874	12.092	6.853	18.091	10.121	43.944	9.203	26.900	.940
	MM	12+	4.685	9.345	4.963	10.523	4.768	10.891	4.986	15.080	
35-39	RR	9-11	4.922	8.801	5.031	11.437	7.020	21.279	17.028	57.700	.996
	MM	12+	4.260	7.820	4.118	8.014	4.768	9.929	4.306	10.499	
40-44	RR	9-11	5.034	8.407	4.974	9.075	15.567	77.042	55.716	285.017	.999
	MM	12+	3.924	6.578	4.028	7.573	4.621	9.613	4.524	9.614	
45-49	RR	9-11	4.781	8.168	5.368	13.895	6.876	22.719	-	-	.990
	MM	12+	4.134	6.246	4.387	6.510	4.691	8.630	4.740	9.899	
50-54	RR	9-11	4.857	8.498	4.889	19.992	9.439	33.292	4.883	8.339	.902
	MM	12+	3.996	5.876	5.283	11.348	4.966	7.412	4.506	6.051	
55-59	RR	9-11	5.025	7.501	13.943	34.442	6.190	10.548	-	-	.924
	MM	12+	3.835	5.267	4.061	7.502	4.082	6.160	2.595	12.260	
			r=.997		r=.985		r=.989		r=.899		

*Sig. at 1% unless otherwise indicated.

the RR and MM trainees as well. It is on the basis of this and other evidence shown below, that one may reasonable infer the holistic character of the change in earnings.

RR and MM CWHS Members and Trainees (Table 8)

The most striking evidence of the holistic nature of the change in earnings is found when we compare the histories of the CWHS member--for whom data on schooling are not available--with those of the Institutional trainees, when classified as high school dropouts or graduates. For the RR and MM graduates and dropouts alike, the correlation coefficients reveal a clearly delineated relationship between the 1958-62 CER and the change in earnings from 1958 to 1965-69. This is equally true of the CWHS members. And although we are somethimes assured that the CWHS members are better schooled, higher paid and more advantaged than the disadvantaged trainees, the process of change is precisely the same for all three cohorts. Whether one coalesces the CWHS observations with those of the dropouts or the graduates, of each sex, race, and age, the hypothesis holds true. Cumulative Earning Rate must reflect the differential effects of schooling levels on the change in earnings.

CWHS Members and Trainees (Tables 9 and 10)

Precisely the same holistic characteristics mark the change in earnings of the high school dropouts and graduates among the Institutional trainees, and the CWHS members when the 1965-69 earning pattern is held constant. Whether the RR and MR earning changes are compared (Table 9), or the RM and MM changes are compared, the findings are the same.

The CER in 1958-62 presages the change in earnings, and is commensurate with the earning changes from 1958 to 1965-69. This is equally true for the high school graduates, the dropouts, and the CWHS members, and when their histories are coalesced into a single synthetic cohort.

IMPLICATIONS FOR PUBLIC POLICY

Throughout this paper, I have emphasized the empirical evidence that

TABLE 8

TABLE 8: RR AND MM CWHS MEMBERS AND 1964 MDTA INSTITUTIONAL TRAINEES WITH 9-11 OR 12 YEARS OF SCHOOLING THE CORRELATION BETWEEN THE 1958-62 CER AND THE CHANGE IN EARNINGS FROM 1958 TO 1965-69, BY EARNING PATTERN, 1958-62/1965-69

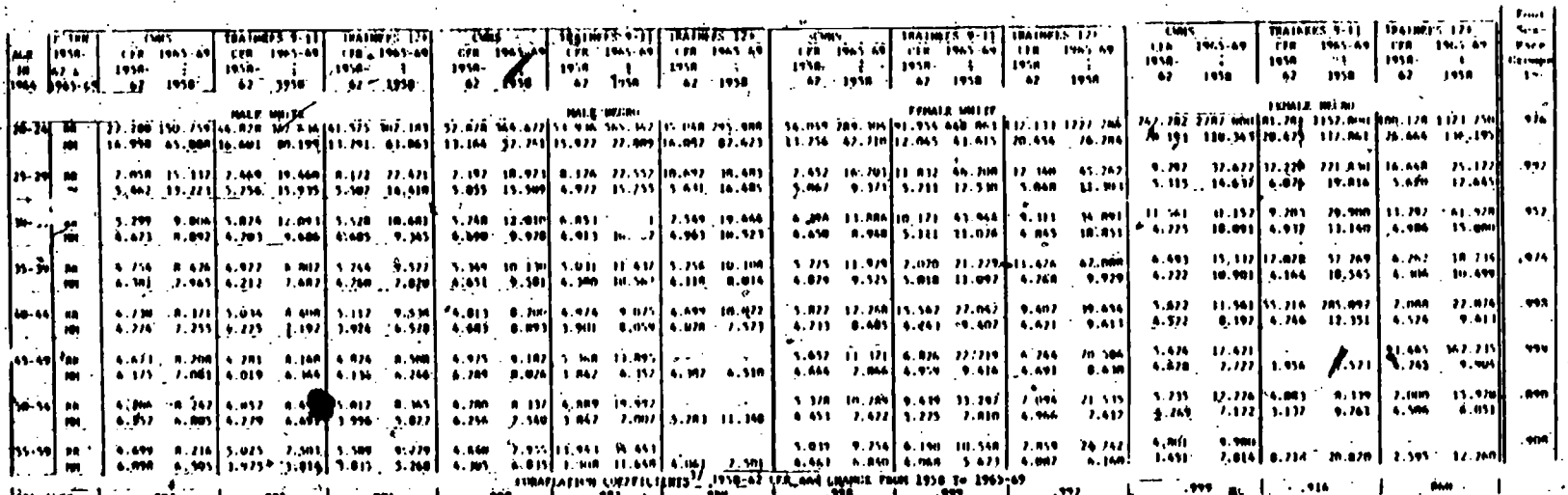


TABLE 9: RR AND MR CWHS MEMBERS AND 1964 MDTA INSTITUTIONAL TRAINEES WITH 9-11 OR 12 YEARS OF SCHOOLING THE CORRELATION BETWEEN THE 1958-62 CER AND THE CHANGE IN EARNINGS FROM 1958 TO 1965-69, BY EARNING PATTERN, 1958-62/1965-69

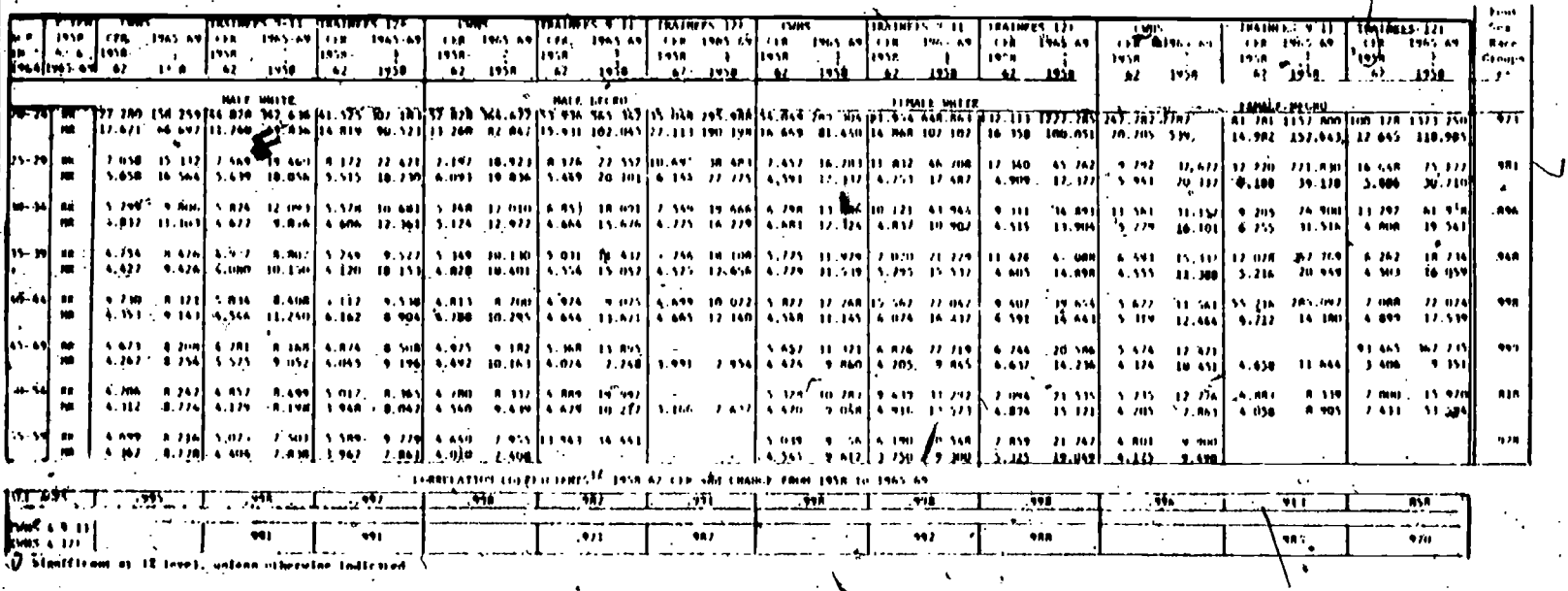
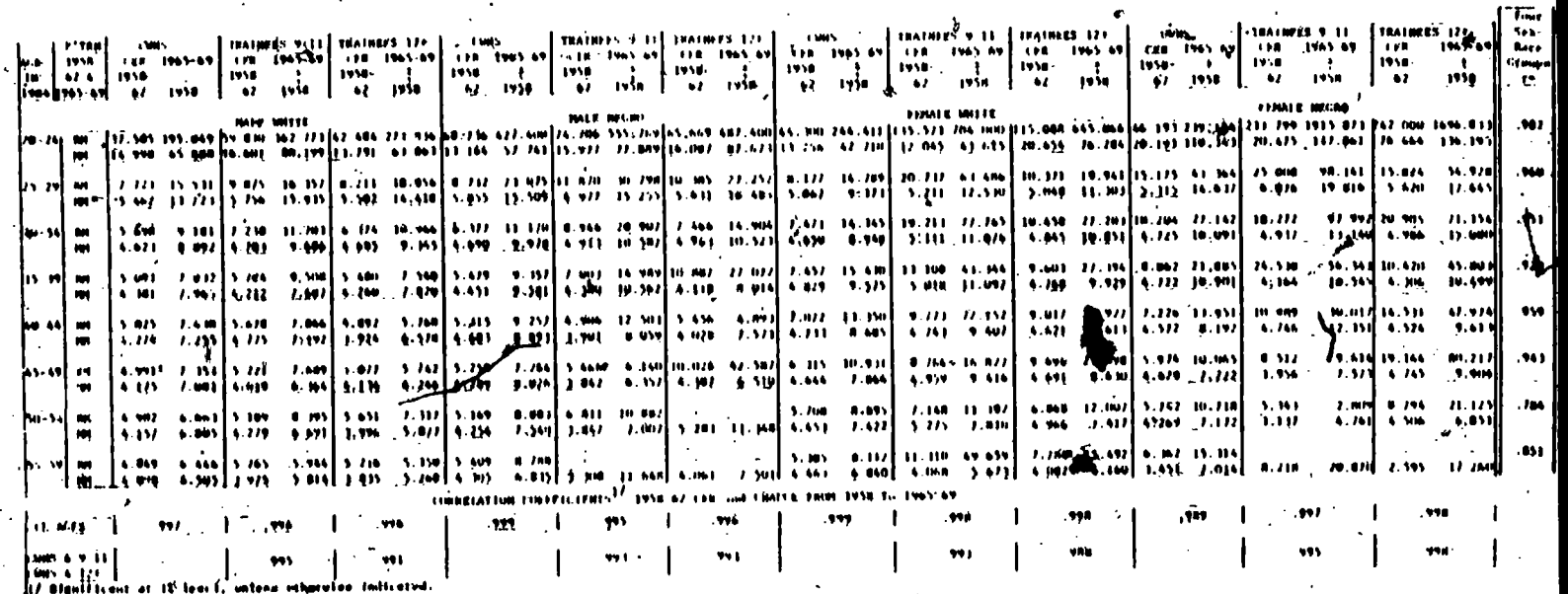


TABLE 10

TABLE 10: RM AND MM CWHS MEMBERS AND 1964 MDTA INSTITUTIONAL TRAINEES WITH 9-11 OR 12 YEARS OF SCHOOLING THE CORRELATION BETWEEN THE 1958-62 CER AND THE CHANGE IN EARNINGS FROM 1958 TO 1965-69, BY EARNING PATTERN, 1958-62/1965-69



changes in earning capacity are governed by principles which can be isolated and quantified within a longitudinal analytical system. The implications of my findings are many and varied, but space limitations permit comment only on one of the most significant.

The Change In Pattern (Tables 11 and 12)

The evidence concerning the determinative nature of change in the main has been discussed in terms of the change from 1958 to 1965-69 and its relationship to earning patterns in 1958-62. For public policy, this relationship can be expressed in another, and more pragmatic manner. In Tables 11 and 12, we seek to answer two questions. What was the likelihood that individuals with a given earning pattern in 1958-62 experienced an improvement or a deterioration in earning pattern in 1965-69? And was the process of change different for the CWHS members and the 1964 Institutional trainees? Answers to these questions are based on the changes in earning patterns of 114,775 men and women CWHS members and Institutional trainees.

1958-62 RISERS and MIXERS

A comparison of the 1958-62 RISER and MIXER pattern changes reveals a clear relationship between the 1958-62 pattern and the change in pattern. For those under twenty in 1964, the percentage of MIXERS who become RISERS in 1965-69 exceeds the percentage of 1958-62 RISERS who remain RISERS in 1965-69. This is readily explicable if one posits that MIXERS in this age group tend to leave school earlier than the RISERS. In each successively older age group, however, the percentage of 1958-62 MIXERS who become RISERS in 1965-69 declines. The percentage of RISERS who become MIXERS, however, also tends to decline in each successively older age group. In short, the older the age group, the greater is the likelihood that a favorable pattern in 1958-62 will be replicated in 1965-69. Similarly, an unfavorable pattern in 1958-62 increase the likelihood of a less favorable pattern in 1965-69.

In each instance, however, in 1965-69 sizeable percentages of RISERS do become MIXERS, and MIXERS do become RISERS.

TABLE 11: MALES — THE CHANGE IN EARNING PATTERNS FROM 1958-62 to 1965-69 — CORRELATION BETWEEN THE CHANGES OF 1964 CWHS[1] MEMBERS AND MDTA INSTITUTIONAL TRAINEES, BY EARNING PATTERN IN 1958-62

Pattern 1958-62	1964 CWHS Total Number	%	% With Pattern in 1965-69 R	D	M	C	1964 INSTITUTIONAL TRAINEES Total Number	%	% With Pattern in 1965-69 R	D	M	C
Age in 1964: Under 20												
R	836	100.0	31.0	1.1	67.5	0.5	1,123	100.0	27.5	2.7	69.2	0.6
M	128	100.0	40.6	2.3	55.5	1.6	154	100.0	30.5	1.9	66.9	0.7
C	2,708	100.0	29.0	1.9	68.4	0.7	3,091	100.0	24.8	2.0	70.8	2.4
D	3	-	-	-	-	-	5	-	-	-	-	-
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .985 Sig 1%			
Age in 1964: 20-24												
R	3,003	100.0	45.7	2.3	51.5	0.5	5,215	100.0	33.1	2.8	63.3	0.8
M	2,069	100.0	43.9	2.6	52.7	0.8	3,803	100.0	30.0	2.9	65.6	1.4
C	521	100.0	34.9	4.2	59.3	2.1	1,563	100.0	25.5	3.1	68.3	3.1
D	31	100.0	38.7	9.7	48.4	3.2	33	100.0	21.2	3.0	75.8	0
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .919 Sig 1%			
Age in 1964: 25-29												
R	1,834	100.0	67.3	1.4	30.8	0.4	1,058	100.0	40.6	3.3	55.4	1.7
M	2,731	100.0	47.5	2.8	48.4	1.3	4,098	100.0	32.0	3.1	63.5	1.3
C	99	100.0	38.4	6.1	41.4	14.1	124	100.0	24.2	4.0	58.9	12.9
D	59	100.0	35.6	5.1	54.2	5.1	120	100.0	29.2	7.5	59.2	4.1
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .853 Sig 1%			
Age in 1964: 30-34												
R	2,297	100.0	74.9	0.9	23.8	0.4	586	100.0	41.5	3.6	52.5	2.4
M	1,950	100.0	42.7	3.4	52.9	1.0	2,587	100.0	29.2	4.8	63.2	2.7
C	90	100.0	28.9	7.8	45.5	17.8	129	100.0	18.6	3.9	59.7	17.8
D	60	100.0	30.0	15.0	53.3	1.7	139	100.0	33.1	8.6	49.7	8.6
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .827 Sig 1%			
Age in 1964: 35-39												
R	2,590	100.0	75.5	1.1	23.3	0.1	508	100.0	46.1	4.3	46.2	3.3
M	1,793	100.0	38.0	3.1	57.0	1.9	1,985	100.0	28.4	4.5	63.3	3.8
C	88	100.0	29.5	17.0	44.3	9.1	169	100.0	23.7	5.5	48.5	22.5
D	62	100.0	17.7	11.3	66.2	4.8	119	100.0	22.7	6.7	64.7	5.9
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .884 Sig 1%			
Age in 1964: 40-44												
R	2,636	100.0	73.4	1.4	24.5	0.6	461	100.0	39.5	6.1	48.2	6.3
M	1,716	100.0	34.6	4.0	59.4	2.0	1,717	100.0	26.7	6.5	61.8	5.0
C	105	100.0	32.4	15.2	40.0	12.4	177	100.0	20.9	9.6	48.5	20.9
D	65	100.0	27.7	13.8	52.3	6.2	121	100.0	24.8	5.0	57.0	13.2
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .833 Sig 1%			
Age in 1964: 45-49												
R	2,327	100.0	73.0	2.2	23.9	0.9	423	100.0	42.7	7.4	44.0	5.9
M	1,630	100.0	33.1	4.7	59.6	2.6	1,127	100.0	25.5	7.4	62.0	5.1
C	97	100.0	26.8	13.4	44.3	15.5	115	100.0	27.0	7.0	41.7	24.3
D	58	100.0	6.9	8.6	74.2	10.3	79	100.0	21.5	8.9	55.7	13.9
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .888 Sig 1%			
Age in 1964: 50-54												
R	1,974	100.0	67.3	2.2	29.3	1.2	211	100.0	33.2	7.6	55.4	3.8
M	1,460	100.0	29.1	6.2	62.1	2.5	738	100.0	23.3	8.0	60.4	8.3
C	97	100.0	27.8	12.4	44.3	15.5	100	100.0	19.0	10.0	43.0	28.0
D	69	100.0	18.8	14.5	59.5	7.2	78	100.0	24.4	11.5	48.7	15.4
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .821 Sig 1%			
Age in 1964: 55-59												
R	1,543	100.0	56.4	5.5	36.4	1.7	112	100.0	31.2	7.1	54.5	7.1
M	1,232	100.0	22.7	10.6	64.0	2.7	367	100.0	22.3	4.9	61.8	10.9
C	71	100.0	31.0	14.1	42.2	12.7	52	100.0	21.2	9.6	36.5	28.0
D	58	100.0	19.0	20.7	46.5	3.8	34	100.0	14.7	17.6	50.1	17.6
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .852 Sig 1%			

1/ Continuous Work History Sample

TABLE 12: FEMALES -- THE CHANGE IN EARNING PATTERNS FROM 1958-62 TO 1965-69 --
CORRELATION BETWEEN THE CHANGES OF 1964 CWHS[1/] MEMBERS AND MDTA
INSTITUTIONAL TRAINEES, BY EARNING PATTERN IN 1958-62

Pattern 1958-62	1964 CWHS						1964 INSTITUTIONAL TRAINEES					
	Total		% With Pattern in 1965-69				Total		% With Pattern in 1965-69			
	Number	%	R	D	M	C	Number	%	R	D	M	C
					Age in 1964:		Under 20					
R	401	100.0	16.9	9.0	69.6	4.5	513	100.0	15.8	9.6	69.2	5.4
M	47	100.0	19.1	17.0	59.6	4.3	97	100.0	12.4	10.3	75.3	2.1
C	1,908	100.0	19.8	9.0	66.0	5.3	3,036	100.0	16.0	10.2	65.6	8.2
D	4	-	-	-	-	-	4	-	-	-	-	-
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .981	Sig 1%		
					Age in 1964:		20-24					
R	1,671	100.0	18.7	15.9	57.6	7.8	2,182	100.0	19.1	11.2	64.4	5.4
M	1,089	100.0	17.4	13.1	61.3	8.1	1,783	100.0	14.8	11.1	66.6	7.6
C	633	100.0	14.7	13.1	57.8	14.4	2,646	100.0	17.3	10.0	62.0	10.7
D	26	100.0	15.4	11.5	61.6	11.5	85	100.0	10.6	4.7	71.8	12.9
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .994	Sig 1%		
					Age in 1964:		25-29					
R	639	100.0	29.4	12.2	52.1	6.3	451	100.0	22.8	10.6	59.4	7.1
M	1,177	100.0	21.7	12.1	58.5	7.6	1,665	100.0	19.4	9.2	64.0	7.4
C	234	100.0	20.1	11.1	52.1	16.7	605	100.0	21.8	10.4	52.1	15.7
D	115	100.0	24.3	9.6	55.7	10.4	179	100.0	21.2	10.0	59.9	8.9
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .991	Sig 1%		
					Age in 1964:		30-34					
R	598	100.0	32.1	8.5	54.0	5.4	421	100.0	27.8	8.1	58.2	5.9
M	973	100.0	24.4	9.8	59.6	6.3	1,240	100.0	23.1	8.2	61.4	7.3
C	328	100.0	23.8	10.4	51.5	14.3	678	100.0	28.9	8.4	49.4	13.3
D	79	100.0	19.0	13.9	48.1	19.0	183	100.0	21.3	8.2	58.5	12.0
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .981	Sig 1%		
					Age in 1964:		35-39					
R	787	100.0	43.3	6.4	46.2	4.1	438	100.0	33.6	5.0	56.4	5.0
M	1,114	100.0	26.2	6.6	62.6	4.6	1,189	100.0	22.3	8.5	61.6	7.6
C	339	100.0	28.9	13.9	43.4	13.9	777	100.0	27.4	7.3	51.2	14.0
D	82	100.0	25.6	20.7	42.7	11.0	154	100.0	22.7	10.4	57.8	9.1
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .949	Sig 1%		
					Age in 1964:		40-44					
R	958	100.0	42.9	7.0	47.1	3.0	491	100.0	32.0	7.5	51.9	8.6
M	1,141	100.0	27.6	8.7	59.2	5.1	1,134	100.0	27.0	8.6	57.2	7.2
C	362	100.0	28.7	11.0	48.6	11.6	728	100.0	31.3	9.3	42.3	17.0
D	87	100.0	18.4	12.6	56.4	12.6	122	100.0	30.3	12.3	43.5	13.9
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .953	Sig 1%		
					Age in 1964:		45-49					
R	968	100.0	46.8	7.6	41.8	3.7	330	100.0	32.7	9.7	46.7	10.9
M	1,016	100.0	26.7	9.5	57.3	6.5	964	100.0	29.0	8.9	54.7	7.4
C	273	100.0	34.4	10.2	37.7	17.6	547	100.0	32.4	6.8	38.0	22.8
D	70	100.0	25.7	14.3	48.6	11.4	108	100.0	28.7	6.5	58.3	6.5
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .944	Sig 1%		
					Age in 1964:		50-54					
R	881	100.0	46.9	6.6	43.1	3.4	212	100.0	32.5	9.0	50.0	8.5
M	931	100.0	26.6	10.4	56.0	7.0	537	100.0	30.7	8.8	51.2	9.3
C	228	100.0	33.8	14.9	33.8	17.5	308	100.0	29.5	7.5	31.5	31.5
D	76	100.0	15.8	17.1	53.9	13.2	80	100.0	36.2	6.2	42.6	15.0
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .850	Sig 1%		
					Age in 1964:		55-59					
R	707	100.0	39.6	11.5	44.1	4.8	66	100.0	33.3	7.6	47.0	12.1
M	772	100.0	19.6	14.0	60.0	6.5	213	100.0	23.9	8.4	55.4	12.2
C	170	100.0	18.2	13.5	45.3	22.9	138	100.0	18.1	8.7	38.4	34.8
D	51	100.0	19.6	15.7	49.0	15.7	25	100.0	28.0	8.0	48.0	16.0
CORRELATION, CWHS and TRAINEE PERCENTS:									r = .931	Sig 1%		

1/ Continuous Work History Sample

1958-62 DECREASERS

While the number of 1958-62 DECREASERS is small, this group, in the main, shifts to the MIXER category in 1965-69. While this is the predominant change, there is a significant, albeit relatively small shift to the RISER pattern in 1965-69. Relatively few individuals change to a CONSTANT pattern in 1965-69.

1958-62 CONSTANTS

By definition, the CONSTANTS experienced neither increases nor decreases in annual earnings during 1958-62 and hence were excluded from the discussion in earlier sections. In fact, their total earnings in 1958-62 were very close to zero, as might be expected. Nonetheless, although they tend to be predominant in the under twenty age group, there is a distinct tendency for many, indeed for most CONSTANTS to move into the MIXED pattern group in 1965-69.

CER and Trainee Pattern Changes

Perhaps the most interesting confirmation of my thesis is to be found in the correlation between the respective changes in pattern of the CWHS members and the 1964 MDTA Institutional trainees. For both men and women, the pattern changes of the CWHS members and the trainees reveal the same process of change, and the determinative influence of the 1958-62 pattern on the change from 1958-62 to 1965-69. For each age group, whether of men or women, the CWHS and trainee pattern changes are significantly correlated, as shown in Table 11 and 12.

The correlations suggest that from entry into gainful employment to retirement, changes in earning capacity become increasingly patterned and determinative, and that efforts to permanently improve the earnings of disadvantaged individuals require programs and means commensurate with the deeply-rooted and holistic factors reflected by the earning patterns of individuals.

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