



**Inequality: A Reassessment of the Effect of Family and Schooling in America.**

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## Review Symposium

*Inequality: A Reassessment of the Effect of Family and Schooling in America.* By Christopher Jencks and Marshall Smith, Henry Acland, Mary Jo Bane, David Cohen, Herbert Gintis, Barbara Heyns, and Stephan Michelson. New York: Basic Books, 1972. Pp. ii+399. \$12.50.

James S. Coleman

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This book is an example of a new activity among social scientists. The activity has two components. The first, less new than the second, but important in the development of social research, is its focus on what might be termed "macrosocial research." What I mean by macrosocial research is that the parameters estimated characterize a well-defined population, such as the U.S. population of a particular age range. Such research can do more than examine intraindividual processes, as much survey research has been confined to. ("Persons who are higher in  $X$  tend also to be higher in  $Y$ .") It can, in its analysis, examine the functioning of social institutions through which that population passes. Demographers and sociologists concerned with occupational mobility have been doing this for some time, but it is only very recently that research involving education has begun to participate in macrosocial research. As the research on representative samples of the U.S. population or on representative samples of U.S. institutions of a particular sort (e.g., schools or hospitals) increases, the scope of macrosocial research will become broad enough to allow extensive quantitative studies of the U.S. social structure.

The second component of this new activity, made possible by the existence of macrosocial research, is the bringing together of research results and reanalysis of data from a number of sources, all characterizing the same population, to draw implications for social policy.

An earlier, but much smaller attempt in the same genre was the "Moynihan Report," a paper that drew together statistics on unemployment and AFDC payments to argue that the primary problem among blacks was a problem of employment of black males, and the primary solution lay in increasing their employment levels (Moynihan 1965).

This book is more ambitious but more confused in purpose. It brings together (1) research on the effect of family background, school resources, and IQ on cognitive achievement in school and on years of school completed; (2) research on the effect of cognitive achievement, years of school completed, and family background on occupational prestige and income; and (3) a variety of other statistics, including the average years of school completed and the inequality in school completion, over a period of years, and the average level of income and the inequality of income, again over a period of years.

The aim of the book is to examine the potential of alternative policies for equalizing income. But this aim is not evident until a concluding non-analytical chapter titled "What Is to Be Done?" in which the authors declare, "The reader should by now have gathered that our primary concern is with equalizing the distribution of income" (p. 261). The main policy argument of the book then becomes an argument that equalization of educational opportunity will not result in equalizing adult incomes, and therefore some kind of income redistribution scheme is necessary. They say, for example, "Nor is there much evidence that equalizing the amount of time people spend in school is an effective way of equalizing anything else" (p. 261).

Now on the face of it, the argument that the most effective way to equalize opportunity is to equalize income rather than something only loosely connected to it, like education, is sensible. It would hardly seem to require intensive analysis to reach this conclusion, the transparency of which suggests that efforts to equalize educational opportunity are not primarily directed at equalizing income.

But in the analysis that led Jencks and his colleagues to this conclusion there are several serious problems. First, the authors, by skillful but highly motivated use of statistics, understate the effect of educational attainment and cognitive skills on income.<sup>1</sup> They do so by comparing the effect of educational level on income with the unexplained variance in income. The latter contains in it the unexplained variance due to poor measurement of education, as well as to other factors such as age and region of the country, which ought reasonably to be controlled. If, on the other hand, the effect of educational level were compared with the effect of any other factor subject to public policy, the results of the research they cite, together with other research results, would show that educational level is the strongest measurable characteristic of males (other than age) in determining their income levels. Only by comparing measured education with all unmeasured factors as well as measurement error, all of which they lump

<sup>1</sup> Another example of the motivated use of statistics is the following pair of statements: "Indeed, when we compare men who are identical in all these respects [family background, cognitive skill, educational attainment, occupational status], we find only 12 to 15 percent less inequality than among random individuals" (p. 226); and, "Thus even a 100 percent insurance scheme that eliminated all income variation among people with similar family backgrounds, educational attainments, test scores, and occupations would leave income inequality at around 50 percent of its present level" (p. 229). In the first statement Jencks wants to show that most of the variation in income is between persons with the same social characteristics, so he uses a statistic  $1 - \sqrt{1-.222} = .116$ , which he rounds up to 12%. In the second statement, he wants to show that persons with the same social characteristics are alike in income, leaving a large portion of the inequality between persons of different social characteristics. He uses the same multiple correlation coefficient (the correlation between these social characteristics and income) to do this, .222, but instead of  $1 - \sqrt{1-.222}$ , he uses  $\sqrt{.222} = .47$ , or about .50. The sizes of these statistics, 12-15 vs. 50, are intended to convey different things to the reader, but they are simply different transformations of the same number, differing in their metric.

together as "luck or personality," are they able to argue, as they do, that education's effect is small.<sup>2</sup>

But the strongest methodological fault in the argument lies much deeper. The argument that equalizing education will not result in equalizing incomes is one about the relation of variance in education to variance in income, at the societal level. Yet all the analysis is concerned with relations at the individual level. Whether education is related to income at the individual level is quite independent of whether variance in education is related to variance in income at the societal level. Suppose, for example, education is highly related to income at the individual level and a government then attempts to equalize income by equalizing education. Assuming that the occupational structure remains the same, the policy may have no effect in reducing inequality of income, but only an effect in reducing the relation of education to income. College graduates may become taxi drivers, but that will not increase the wages of taxi drivers. Any effect on income distribution must proceed through a complex set of processes, which depend, for example, upon the restrictions of labor supply into different occupations by labor unions and professional associations and on the relative demands for different types of skills. But the authors have examined none of these interconnections between the individual-level relation of education to income and the societal-level relation of variance in education to variance in income. An appropriate analysis is one like that of Chiswick and Mincer (1972), who examine income inequality and changes in level and inequality of education from 1939 to 1969 and find that reduction in educational inequality leads to some reduction in income inequality (assuming the causal direction).

The third fault in the argument is that their own data, if analyzed at the societal level, suggest that the relation between educational inequality and income inequality is strong indeed, exactly counter to their argument. They have not examined the societal-level relation itself over time, although two tables in their book (2-1 and 7-1) allow a beginning at such an analysis. Comparing these tables reveals a striking similarity since 1929 in the reduction of income inequality and inequality in education of people in prime labor-force years. But I have discussed that relation elsewhere and will not do so here (Coleman 1973).

What went wrong in this book? Why does it show these fundamental methodological faults (while at the technical level of quantitative data

<sup>2</sup> An example of a very powerful variable affecting income and affecting it differentially for men of different educational levels is age. In unpublished research, Blum and Coleman (1970) found that for a representative sample of white males born from 1929 to 1938, the incomes of those with college degrees grew from about \$4,000 at age 21 to about \$10,000 at age 36, a growth of 2.5 times in 15 years. For those with less than a high school education, the growth was from \$3,200 at age 21 to \$6,400 at age 36. For a representative sample of black males, the income growth of those with college educations was from \$4,000 to \$7,600, a growth of 1.9 times, and that for blacks with less than a high school education was from \$2,800 to \$4,600. Jencks cites this report, but nowhere takes note of the effect of age on income.

analysis it is excellent)? I think it is probably because the book suffered from a mixture of motives by the various authors. If a single author had sat down with the aims of equalizing income expressed in the last chapter and had carried out the analyses that these aims led him to, he would have focused on very different sets of data. He would have looked first at various factors affecting income distribution, such as aggregate demand, the structure of demand in different sectors of the economy, changes in the occupational structure, and perhaps educational levels and distribution. The effects of the latter he would have studied through regional analyses (because income distributions and educational distributions differ by region in the United States). But a cursory look at the existing research showing little relation between school-resource input and cognitive achievement would have been sufficient to show that equalizing school inputs would be irrelevant to income equalization. Then why, in this book, is nearly all the space devoted to these irrelevant analyses? Various members of this group had made very large investments in analyses of school data, over a long period of time, and were largely occupied by that. Thus for at least some of the group, their primary concern was not with equalizing the distribution of income, but with the relation of school inputs to school outputs. For others, their primary concern was with the effects of educational attainment and cognitive skills.

To be sure, the book is Jencks's book, and it shows the integrating effect of a single hand in the thread of the argument throughout. But the fact remains that all the analyses related to education carried out by the various subauthors are not very relevant to the professed concern of the book. These analyses could have been put together, in a similar work devoted to the determinants and effects of educational attainment and achievement, with the last two chapters excised and the previous chapters released from the bias induced by the need to culminate in income equalization. It would have been a good book and a good example of the macrosocial analysis that is slowly coming into being. It would not have been as newsworthy or attention getting, but it would have stood the test of deeper scrutiny.

There is, however, an important point made. The point could have been made very simply, in a short paper. It is this: that equality of opportunity is distinct from equality of results (as measured by income), and attention given by governments to equality of opportunity must not distract attention from inequality of income, nor from trends in inequality of income. Because the book does not address this point squarely, it fails to make it clearly (and is forced into arguing that there is almost no inequality of opportunity). Its publication should nevertheless draw attention to the distinction between the two inequalities.

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There are three different "Jencks reports" of interest. The first consists of ingenious data analyses. They are interesting, ambitious, and found largely in the volume's footnotes and appendices. The second involves Jencks's personal interpretations of these research results and is found in the text of *Inequality*. These interpretations are provocative and well written; they are also debatable and often far removed from the actual results. The third is the mass-media vulgarization that is vaguely related to Jencks's text and virtually unrelated to the actual results. Each of these three "Jencks reports" requires review.

The authors consider, in turn, inequalities in the schools, in cognitive skills, in educational attainment, in occupational status, in income, and in job satisfaction. Such a tour opens up a raft of controversial issues from testing problems and genetic influences on IQ scores to the effects of school segregation and family background. On each issue, the volume contributes both interesting analyses and wry commentary.

Jencks and his seven Harvard colleagues build upon James Coleman's monumental study, *Equality of Educational Opportunity* (1966) and Peter Blau and Otis Dudley Duncan's *The American Occupational Structure* (1967). But they do not present new data; rather they conduct a series of secondary analyses on a broad range of available data. This is an altogether praiseworthy procedure. We social scientists are terribly wasteful of valuable data, often preferring to collect our own new information on a problem rather than painstakingly sifting through the relevant data previously gathered for secondary analysis. Yet there are serious methodological problems raised by combining data from a variety of studies, problems that Jencks and his co-workers do not solve. (These problems are especially critical in "Appendix B," which summarizes in path diagrams the basic argument of the book.) For example, correlations are taken from diverse investigations and used in the same path analysis.

Most of those who read the book will probably ignore the analytical footnotes and appendices. Yet the real meat of *Inequality* is to be found there. For example, a brilliant appendix on "Estimating the Heritability of I.Q. Scores" is alone worth the book's high price. It demonstrates neatly how different approaches reach different conclusions. Neither the extreme hereditarians nor extreme environmentalists will willingly accept the authors' "best guess" that about 45% of the variance in Stanford-Binet

IQ scores in the U.S. population relates to genetic variation, about 35% to environmental variation, and about 20% to genetic-environmental covariance. This last element is routinely assigned purely to genes by Jensen, Herrnstein, Eysenck, and other hereditarians. But it represents the fact that genotypically bright children are typically raised in superior environments and thus cannot be allocated exclusively to either heredity or environment. The important message of the appendix, however, is not the highly tentative estimates, but the thorough demonstration of the highly tentative nature of the whole field. If all who write on this issue were as careful, open, and competent, we would have been spared the unnecessary fireworks surrounding this topic in recent years.

The principal errors of the book's analyses, in my view, are not of commission but omission. While inequality among individuals is given intense attention, group inequality is virtually ignored. When race and class are considered, they are typically treated as characteristics of individuals rather than as group phenomena around which inequality in a complex, heterogeneous industrial society is best judged.

Strange that a talented sociologist of socialist persuasion should view America as almost a random social system. Stranger still that the analyses would reflect this individualistic perspective so completely as not to compare the extremes of the income and occupational distributions with probability models. Had this been done, many of the conclusions from the same data would have been altered. Special analyses are not provided, for instance, of the effects of education upon poor children, despite the fact that the work of Coleman and others indicates that schools have their chief impact upon such children. Jencks, of course, has every right not to consider group inequality; but the volume might have been better entitled *Individual Inequality*.

This distinction between individual and group inequality is not academic. The exclusive focus upon individuals not only influences the study's conclusions but colors most of Jencks's interpretations. (Jencks assumes full responsibility for the interpretations, some of which are privately contested by a number of his coauthors.) This focus combines with a disregard for absolute improvement and a distinctive view of statistical error to give Jencks's text a negative, debunking, almost nihilistic character.

Though none of the extensive social psychological work on relative deprivation and social comparison phenomena is cited, Jencks makes it clear in chapter 1 that his concern centers upon relative and not absolute poverty. Most social scientists will agree. But I think the volume's disregard for absolute levels of well-being is extreme. If, through a transfer of payments or other schemes, the floor of American poverty were to be raised significantly beyond the increase in prices, it would represent a needed step forward, even if it had only an insignificant effect on closing the relative gap in individual equality.

A more critical problem, however, is posed by Jencks's treatment of statistical error. He sets unusually high standards for correlations dealing with psychological measures across individuals. Thus, he speaks of one such

correlation as "only 0.38" (p. 248) though such a coefficient is by no means modest for such data. Consequently, Jencks seems surprised when he can explain for white nonfarm males "only" 23% of the variance in income and 41% of the variance in occupational prestige with a range of such predictors as family and personal education and IQ (fig. B-7, p. 346). Concentrating on the hole rather than the doughnut, he fashions this unexplained variance into the big news of the volume.

If the indicators of such supposedly critical factors as education do not predict most of the variance in financial and occupational success, asks Jencks, what does? His answers emphasize "luck" and personality characteristics. But these answers are merely speculations about the unexplained variance, not findings; and they involve two critical assumptions. First, Jencks assumes that his indicators are virtually error free and that, for example, different and better indicators of education would not significantly enhance the amount of success variance that education can explain. Second, he assumes that "luck" not only plays an enormous role in success, but that it is unrelated to education and is largely beyond the means of science to measure. He may be right in his guess about "luck," but I think we know now about some of "luck's" components which are not considered in *Inequality*.

Consider influence networks. Much that is called "luck" is probably the operation of "knowing the right people" and being in "the right" communication channels. Such networks are not only related to family ties but school contacts as well. This is probably the reason why racially integrated schooling appears to have a larger beneficial effect for blacks in later getting more college training and better jobs than in immediate gains in test scores. This example is instructive because it demonstrates how "luck" may well be related to schooling in ways not considered or measured by Jencks. Indeed, his own incisive handling of the heredity-environmental question for IQ suggests a promising hypothesis. In direct ways, much of "luck" and other processes involved with the unexplained variance may covary with education and make where you go to school considerably more important than indicated in this book.

At any rate, Jencks's principal conclusions include the following. (1) Educational opportunities are far from equal in terms of resources and of access to particular kinds of schoolmates and curricula. (2) Inequality in test scores is largely a function of genetic and total environmental inequalities. It might decline by 9%–19% if the amount of schooling and the quality of schools could be equalized and by 6% if everyone's economic status could be equalized. "Additional school expenditures are unlikely to increase achievement and redistributing resources will not reduce test score inequality" (p. 109). (3) "Eliminating racial and socio-economic segregation in the schools might reduce the test score gap between black and white children and between rich and poor children by 10 to 20%" (p. 109).

(4) "[T]he most important determinant of educational attainment is family background" (p. 159). (5) Occupational status is strongly related



to educational attainment, though there are "enormous" differences among people with the same amount of formal schooling. The poorer jobs of blacks, however, is in large part a function of direct racial discrimination. (6) "Neither family background, cognitive skill, educational attainment nor occupational status explains much of the variation in men's incomes" (p. 226). (7) "The character of a school's output depends largely on a single input, namely the characteristics of the entering children. Everything else—the school budget, its policies, the characteristics of the teachers—is either secondary or completely irrelevant" (p. 256).

Jencks derives from these conclusions a range of sweeping policy recommendations. (a) We should give up "the factory model" of schools where reforms are justified only in terms of long-term effects of the alumni; rather let us change schools with an eye toward the immediate benefits to students and teachers. (b) Schools should diversify their educational programs; and every family should have a free choice as to which school its children attend (though Jencks concedes that this "freedom of choice" idea has often failed on racial grounds). (c) Centralized financing of public education would be desirable. In higher education, every student should have free tuition and a living stipend but then later pay an income tax surcharge. (d) Job development and job rotation could help equalize some varieties of competence. (e) The nation needs a comprehensive income policy. Narrowed wage differentials between occupations could lessen income inequality, as happened during World War II under federal controls.

(f) Particularly intriguing is a federally administered income insurance scheme. The government would guarantee the insuree an annual payment equal to half his predicted annual income; in return, the insuree would pay half his actual annual income to the government. If the plan were compulsory, the federal government would pay poorer families half of the difference between their incomes and the national average while collecting from richer families half of the difference between their incomes and the national average. Such schemes, Jencks reasons, would reduce the role of "luck" and discrimination and thus significantly narrow income inequality.

(g) Jencks closes his volume with a ringing finish:

In America, as elsewhere, the general drift over the past 200 years has been toward equality. In the economic realm, however, the contribution of public policy to this drift has been slight. As long as egalitarians assume that public policy cannot contribute to economic equality directly but must proceed by ingenious manipulations of marginal institutions like the schools, progress will remain glacial. If we want to move beyond this tradition, we will have to establish political control over the economic institutions that shape our society. This is what other countries usually call socialism. Anything less will end in the same disappointment as the reforms of the 1960s. [P. 265]

This final statement reveals Jencks's priorities and policy preferences. Lessening income inequality is his paramount priority, and European-style socialism is what is needed to achieve it. Other social-policy goals

and methods pale in significance. Parents, for example, should not be kept from sending their children to the schools of their choice (though such choice has never been a right of parents) just to achieve racial desegregation. But far more severe federal restraints in pursuit of more economic equality are justifiable and urgently needed. Fair enough. Yet Jencks's interpretations, conclusions, and policy recommendations cannot be understood or evaluated unless one keeps in mind this firm priority.

I question, however, two assumptions. First his assertion that "egalitarians" generally thought schools could by themselves close economic inequalities is exaggerated. Second, Jencks accepts too uncritically the current right-wing theme that the liberal reforms of the 1960s failed. The truth is that they never were put to the test. Discussed widely under Kennedy and initiated by Johnson from 1964 to 1966, the liberal programs were cut down in infancy first by the Vietnam war and then by the Nixon administration.

To complicate the problem further, major new research from Johns Hopkins University employing similar data reaches sharply different conclusions. Coleman, Peter Rossi, and their associates in the September 1972 issue of *Social Science Research* show for separate national cohorts of white and black men 30-39 years old in 1968 that educational attainment is critical for both occupational and income success. Only further work can untangle this contradiction. However, my guess is that when others compare occupational and income extremes they will find education is a far more critical correlate than Jencks allows (though this is not to suppose that it sharply reduces income inequalities).

Yet if Jencks's interpretations can be challenged, their vulgarization by the mass media can hardly be taken seriously. With little regard for what the book says, many stories simply twisted the major thrust to maintain that "HARVARD PROVES SCHOOLS FAIL." Though Jencks went to considerable trouble to present a more complex view to the media, I fear the popular version acted only to provide an uncritical argument against school reforms of any sort. Some editorials in the conservative press used the vulgarized form of the book's argument to argue almost for the abolition of public education as an expensive waste. Others picked it up and unfairly connected it with a highly questionable antibusing tract by David Armor, a connection understandably denied sharply by Jencks. Revealing, too, was the relative neglect by the media of what the book had to say about genetics and intelligence. This topic was big news throughout the nation when Jensen and Herrnstein presented extreme hereditarian views; but somehow when these views are pointedly countered it is no longer newsworthy.

All of this strongly suggests that America's communication media need spokesmen with some training in social science just as they have secured newsmen trained in space science. Toward this end, sociology departments might consider the possibility of establishing one-year or even one-term noncredit programs for interested newspeople. Basic methodology, especially as it applies to evaluation research, should be one focus of such

programs. The very successful one-year, noncredit Nieman Foundation program at Harvard offers one useful model. The Russell Sage Foundation has been interested in this area for some years now and has employed special conferences and fellowships for science writers. It appears now that the Ford Foundation, too, will soon enter this realm with major fellowships for newsmen to seek social science training. If we as sociologists do not respond to these opportunities and meet these needs, then we have only ourselves to blame for the typically shoddy and incompetent coverage that social science research typically receives in the mass media.

Just what the press is capable of was demonstrated in *Newsday*, the Long Island daily. Earl Lane provided in a two-day feature (October 2-3, 1972) a balanced, in-depth account of the volume in academic perspective. Significantly, Lane did not rely at all on the distorted accounts of the wire services.

Unique, too, was a playfully *ad hominem* piece in *The Village Voice* (October 12, 1972), entitled HOW MUCH DID HARVARD HELP? It questioned the argument that where you went to school made little difference for later success by interviewing Jencks about his own educational career. After determining that he went to private elementary schools, Exeter, and Harvard, the interviewer pressed him about how much his schooling had determined his success. Jencks acknowledged that his close association as a student of David Riesman made "an enormous difference. . . . And because I knew Riesman I had opportunities I never would have gotten had I been Joe Shmoe." Precisely the point, of course, that education is involved with "luck" through influence networks. Despite the ambitious argument of *Inequality*, one is left with the persistent notion that where you go to school is often as important for the rest of us as it was for Jencks.

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I cannot recall any nonfictional book since the Kinsey report on *Sexual Behavior in the Human Female* (1953) that has had such an enormous prepublication buildup as *Inequality*. Press conferences with Jencks, television interviews, and prepublication articles and reviews have caused many members of the reading public to feel that they know its contents and to have formed opinions about its conclusions and recommendations. Like the Kinsey report, it is doubtful if many have read it through because, even though it is well written, its detailed point-by-point coverage of many issues, its numerous footnotes, and its long and complicated appendixes do not make it the kind of a book you just cannot put down. Because it is on an important topic and because it is likely to spark a good deal of controversy, both among those who know of it from the media and those who have read it carefully, it is particularly necessary in this re-

view to summarize its major conclusions and policy recommendations as succinctly and as clearly as possible before offering any criticisms that may qualify or negate its conclusions and recommendations.

The factual basis for the book rests entirely on the reanalysis and reworking of existing data. The most important data sources used extensively in the study are those from the Equality of Educational Opportunity Survey (EEOS) (Coleman and associates), selected materials from Project Talent (Flanagan and associates), the data from the National Opinion Research Center's (NORC) study of veterans (Mason, Klassen, and others), and selected tabulations from the Survey of Occupational Changes in a Generation (OCG) (Blau and Duncan). Data are also taken from the Wisconsin longitudinal Study of Social and Psychological Factors in Status Attainment (Sewell and associates), from the U.S. Census, and from numerous smaller studies.

The principal findings of the study are:<sup>1</sup> (1) that even though educational inequality is much less than in the past, educational opportunity in the United States is still unequally distributed, both in terms of access and utilization. Middle-class students and white students have access to slightly more than their share and use substantially more of the nation's educational resources than lower-class students and black students. (2) The distribution of cognitive skills is unequal among the social classes and between white and black children. High-socioeconomic-status children and white children have a distinct advantage over low-socioeconomic-status children and black children. Both genetic and environmental inequality play a major role in producing cognitive inequality, but also cognitive inequality is increased by the interaction of environment with heredity. Jencks's estimate, based on an extensive examination of existing sources, is that 45% of the variance in IQ scores in the U.S. population is due to heredity, 35% to environment, and 20% to the correlation between heredity and environment. No evidence was found that differences between schools contributed in any important way to cognitive inequality. (3) Family background has more influence than IQ genotype on an individual's educational attainment. The family's influence depends both on its socioeconomic status and on some cultural and psychological characteristics that are independent of its status. The effects of cognitive skill on educational attainment are significant but difficult to estimate. Qualitative differences between schools play only a very minor role in educational attainment, once student characteristics are taken into account. (4) Men's occupational statuses are quite closely tied to their educational attainment. Both family background and cognitive skill affect men's occupational status—mainly by influencing the amount of schooling they obtain, not by influencing the status of men who have finished their education. But because educational attainment is only partly determined by family background and because occupational status is only partly

<sup>1</sup> For a more extensive summary from which these points were taken, see *Inequality*, pp. 253-65.

determined by education, family background has only a moderate influence on a man's eventual occupation. (5) Variations in men's incomes are much harder to explain than variations in their occupational statuses. Educational credentials influence the occupations men enter but have little effect on earnings within occupations; thus their overall effect on income is moderate. Family background and cognitive skills have some effect on a man's occupation and some effect on his income after he enters an occupation, but their overall effects are moderate. There is nearly as much income variation among men who come from similar families, with similar education and similar test scores, as among men in general. This means that luck and possibly competences that have little relation to family background, educational attainment, or cognitive skills must be quite important in determining variations in men's incomes. (6) Job satisfaction and presumably other noncognitive outcomes are only marginally related to educational attainment, occupational status, or earnings.

Jencks concludes that there is little that schools can do to make adults more equal. The reasons he believes this is true are (a) children are far more influenced by what happens at home than by what happens in the school; (b) reformers have little control over those aspects of school that affect children, that is, the way teachers and children actually treat each other; (c) even when a school has an unusual influence on children, the resulting changes are not likely to persist into adulthood. Thus, we should think of school life as an end in itself rather than as a means to adult achievement and make school as pleasant as possible for all children. Diversity should be the objective of the school system, with the ideal system providing as many varieties of schooling as children and parents want and finding ways of matching children to schools that suit them. Every family should have a free choice as to which schools its children attend, regardless of where the family lives—including schools outside its district. This might necessitate more central financing, which Jencks tends to favor, as a means of equalizing expenditures and as a way of making local school boards more responsive to groups they have ignored in the past.

These reforms are all aimed at equalizing people's claims on schooling. Jencks thinks that it is another matter to get poor whites and blacks to use them. Thus, parents may find schools in other neighborhoods inconvenient to use, threatening to their children, and unresponsive to their needs. Mandatory busing may be necessary to break the tradition of segregation, but once that tradition is broken, mandatory busing makes little sense. The evidence reviewed by Jencks suggests that the long-term effects of segregation are small. Consequently, he favors a system in which black parents are free to decide for themselves whether they want their children in segregated or desegregated schools. However, for this to be a real choice, the school systems would have to provide free transportation and sufficient places for black children in the schools of their choice.

Of course the problem of equalizing access to higher education would still remain, but Jencks argues that it would be simple to design a system in which access to higher education would not depend on getting money

from home. It would be harder to design a system in which access no longer depends on test scores and grades, but open admissions is a step in this direction. Higher education should be financed by providing every student with free tuition and a living stipend and then imposing an income tax surcharge based on adult earnings on those who have had these benefits. Jencks feels that this would make opportunities for higher education more equal and educational finance more equitable.<sup>2</sup>

Because the different varieties of adult inequality are, according to Jencks, all very loosely related to one another, no single strategy will eliminate all sorts of inequalities. Specific strategies must be devised for dealing with particular social inequalities, and priorities must be set. Jencks's top priority is to equalize the distribution of income. In light of findings already discussed, he sees little likelihood of equalizing cognitive skills and concludes that even if this could be done it would have little effect on the variation in people's incomes or on their general well-being. He claims that the egalitarian trend in education over the past 25 years has not made the distribution of income or status appreciably more equal. Thus he sees little evidence that equalizing the amount of time people spend in school is an effective way of equalizing anything else. For occupational status a better case for equalization can be made because the people in low-status occupations would get more satisfaction out of an improvement in their occupational positions than would people in high-status occupations. The same is true of income, and since the strategies for equalizing the status of occupations are likely to equalize and vice versa, he treats the two together.

Jencks holds that neither genetic inequality nor disparities in family background dictates the great degree of economic inequality presently found in American society. He estimates that the most genetically advantaged fifth of all men earned only 35%–40% more than the most genetically disadvantaged fifth. Thus, if nongenetic causes of income inequality were eliminated and if we still placed the same value on various kinds of skills, the income gap between male workers in the top and bottom fifths would fall from 7 to 1 to about 1.4 to 1. Further, he argues that income inequality among parents is not a great obstacle to equality among children. He suggests that either competence does not explain much of the variance in income or that background, schooling, and test scores do not explain much of the variance in vocational competence. He thinks that both are partly true and that it is important to equalize competence, although he does not think that such devices as job enlargement, job rotation, or anything anyone has so far suggested offer spectacular promise for accomplishing that end.

From all of this, Jencks concludes that the way to equalize the distribution of income in the United States is to use a direct approach—one that will reduce the income of the rich and increase the income of the poor

<sup>2</sup> For a more extensive treatment of the issues involved and proposed solutions, the reader may wish to consult Sewell (1971).

directly, not by trying to change cognitive skills, educational attainment, occupational competence—all of which he thinks will make only minor differences. He admits that the mechanisms for direct income redistribution are not very feasible in the current American climate, but he believes that in a long slow process, stretching over decades, a substantial redistribution could come about. This would require that the question of income inequality become politicized, so that those with low incomes would cease to accept their condition as inevitable and just and demand changes in the rules of the game. Also it would necessitate changes in people's basic assumptions about the extent to which they are responsible for their neighbors, and their neighbors for them. If these two things should happen, Jencks believes that significant institutional changes in the machinery of income distribution in the United States could take place.

I believe that the above represents a fair and relatively complete summary of Jencks's conclusions and policy recommendations. I will now turn to a discussion of the extent to which they are supported by the evidence he has brought to bear on the questions, the issues of data quality, the adequacy of the analysis, and the logical veracity of the reasoning that leads to his policy recommendations.

Clearly the basic sources of data used in the book are by-and-large the best available for the analysis undertaken. Even then some of the data sources have a variety of weaknesses. The NORC, OCG, EEOS, and the Project Talent data are from national samples of varying degrees of quality—the latter two have serious problems of nonresponse. All but Project Talent are one-shot surveys. The Wisconsin study which has perhaps the most adequate data and has the advantage of being a longitudinal study is, of course, based on a single state. All of the studies have limited data, necessitating the borrowing of bits and pieces of information from more than one survey to answer many of the questions raised in the book. This is done with a moderate amount of caution, but the reader who ignores the fine print of the footnotes may not be aware of the extent to which such data manipulation might lead to an over- or understatement of effects. Many ingenious calculations are made to provide estimates for missing information and this is done with apparent accuracy, but such calculations and estimates are a poor substitute for the necessary data. So far as I can judge, important data sources are not commonly ignored in order to make a particular point—although on several occasions I felt that better data were available in the sources used than those selected by Jencks and that their use would have increased the magnitude of some of the effects of family background, ability, and education on adult attainments, thereby possibly altering his conclusions.

As should be clearly understood, much of the analysis upon which Jencks's conclusions are based comes from the use of linear regression techniques. Although his use of these techniques is straightforward, the standard he employs for assessing the importance of an independent variable, or of several variables arranged in a causal sequence, is always the percentage of variance explained in the dependent variable ( $R^2$ ). Thus,

little attention is given to the role of a variable or series of variables in explaining the complex process by which achievements take place over the course of the life cycle of individuals. Actually the scientific importance of a variable may reside more in its interpretive role in a causal process than on the amount of variance it explains. Thus, the value of the Blau-Duncan models and the extensions of them by me and my associates inheres more in their ability to elucidate the achievement process than in the fact that they explain from 25% to 60% of the variance in educational and occupational attainments.

This overconcern with  $R^2$  (and increments in  $R^2$ ) accounts also for Jencks's easy rejection of many relationships that by usual standards in quantitative social science would be considered quite important. He really comes down to setting a standard that says a causal variable (or set of causal variables) is unimportant if it does not explain most of the variance in the dependent variable of interest. Aside from being an unrealistic standard for the empirical world in which social sciences operate, Jencks equates residual variance with luck, which leads him to the conclusion that luck is more important in determining men's fate than their social origins, their cognitive skills, and their educations.

Although I am willing to credit luck with an important role in achievement, I must point out that the amount of residual variance in any regression model may be due to at least several other sources: (1) unreliability in the measurement of the independent variables, (2) failure to include in the regression model other exogenous and intervening variables that would make a significant contribution to variance in the dependent variable, and (3) failure to adequately define and measure the dependent variable.

All of these points are, of course, well known, and I wish to comment briefly only on the last two because I believe that they are important in judging Jencks's conclusions. It can be easily demonstrated that a large increase in the variance explained in educational and early occupational attainments can be gained by adding a small number of social psychological variables to the basic Blau-Duncan model but, more important, these variables elucidate the achievement process by showing how socioeconomic background is mediated by these variables.<sup>3</sup> With our current model we have been more successful in explaining educational attainment than in explaining occupational attainment and much more successful in explaining occupational attainment than in explaining earnings. We believe that this is largely due to the fact that our model emphasizes factors occurring early in the life cycle, during high school or before, and that in order to explain occupational and economic attainments more fully we will need to add other variables that are more proximate and pertinent to these attainments. Candidate variables would include on-the-job training, years in the labor force, family formation, and the extent and timing of military service. The degree to which these variables are related to social origins, test scores, educational attainment, occupational attainment, and adult

<sup>3</sup> For evidence see Sewell et al. (1969, 1970) and Sewell and Hauser (1972).



economic success remains to be determined, but there are good theoretical reasons to expect significant relationships. Before agreeing that man's fate rides mainly on luck or that it is not possible to explain a larger portion of the variance in adult economic attainment with appropriate measures of these variables, we will want to test out these expanded models.

The definition and measurement of the dependent variable are obviously also factors in how much of its variance can be explained by any given set of independent variables. Schooling is usually completely determined by age 25, and we can measure years of schooling completed quite accurately. Occupational attainment is less fixed at any adult age than is education, and our measurement of occupation is usually less accurate. Finally, income is the most difficult of all of the adult achievements to measure. Conceptually, it can have a variety of meanings, for instance, total income, income from work, real income, and lifetime income. It, too, is variable over the life cycle and is dependent on age. Moreover, people have reason to be less than candid in reporting income. Consequently, we must be very careful to try in all feasible ways to conceptualize and measure the variable as precisely as possible. It is entirely possible that the reason Jencks finds that test scores, family background, and schooling account for only 12%–15% of differences in income while some economists, using similar factors, explain at least twice as much variance is because of differences in the way income is measured. This possibility alone would cause most scholars to be much more cautious than Jencks is about rejecting the contribution of family background, schooling, and test scores as factors in adult economic success.

This leads me to comment on the choice of income as the attainment variable on which Jencks hangs his case for rejecting the influence of family and schooling as factors in adult success. First, I doubt that anyone has seriously advocated equalizing opportunities for schooling as a means of equalizing the distribution of income. Rather, I would have thought that the case for equalizing educational opportunities has most always been a matter of distributive justice in a free society and that the usual rationale for equalizing opportunities for education was (1) to give everyone a fair and equal chance to earn a much coveted status in American society—that of being an educated person and (2) the need for an educated electorate in a democratic society. Achieving a college degree is still a valued status achievement in our society which not only leads to more desirable occupational placement, greater choice of jobs, valued life-styles, and greater participation in the political and economic affairs of the society, but also incidentally increases one's chances of earning a better-than-average income. (Jencks's own figures indicate that each extra year of college boosts future earnings by 7%. Thus, men who are equal in test scores and family background, who graduate from college, on the average, earn 28% more income than those who only graduate from high school.) However, I judge that many persons would go on to higher education in the hope of obtaining these status rewards and would do so even if there were no increase in monetary rewards for additional years of schooling.

Moreover, the claims made by schools, with the possible exception of vocational training institutions, seldom ever mention economic returns but rather stress the virtues of the intellectual life, of appreciation for the arts, of humane living, of informed citizenship, and similar nonpecuniary returns.

Likewise, I maintain that achieving an occupation that is generally accorded high status by others is also an important adult achievement in its own right, regardless of whether it also is accompanied by a high income. (Actually Jencks's own data show that level of occupational attainment makes what most of us would consider to be a substantial contribution to income net of ability, background, and schooling.) The self-respect and the satisfaction one gets from one's work, the deference and esteem accorded by one's fellows, the control one has over hours and conditions of work, are only a few of the important rewards of the higher-status occupations that many persons are willing to make real sacrifices to obtain, both in terms of current and future earnings. There is no need to further belabor this point to the college professors who will be reading this review!

For all of these reasons I find Jencks's conclusions about the lack of importance of family background, cognitive skills, and schooling for adult achievement less than compelling, and my sense of scholarly caution prompts me to say that more and better evidence will be needed before we can accept his claims. I would particularly argue that regression analysis and path analysis, important as they are for discovering and elucidating the extent and nature of the relationship between independent and dependent variables in cross-sectional and longitudinal studies, are not adequate substitutes for true experiments. Jencks's lack of caution on this point seems to have led him and doubtless will lead others to the unequivocal and premature conclusion that the effects of family background, cognitive skills, and schooling are negligible in determining later achievements. Actually, the assessment of these effects should be determined by well-designed, long-term experiments in which students are assigned to schools at random, or if this is not possible—as it probably is not—there should be careful measurement of these and other potentially confounding variables so that their effects can be controlled statistically before sweeping conclusions are made.

Although I reject some of Jencks's major conclusions about the effects of family background and schooling on adult achievements, I find myself in agreement with his argument that school life should be more fun for teachers and pupils, that schools should be diversified, that parents should have a realistically free choice of the schools their children attend, and that there should be greater centralization of school financing than now; I cannot accept his positive conclusion that schools have little or no effects on the development of children's cognitive skills. Even if the evidence from a number of quite inadequate studies seems to indicate this, there are strong theoretical and intuitive reasons for believing otherwise, and until there is evidence from adequately designed experimental studies we cannot afford to quit working on the problem. It is also quite possible that the

kind of school system Jencks proposes would have important effects on children's cognitive and noncognitive characteristics. With greater variations between schools there should be greater diversity in outcomes.

Finally, I agree with Jencks that there is great inequality of income in our society and that the degree of inequality is far greater than can be justified on any rational basis. I would like to see it sharply reduced. I have never thought that providing equal access to schools would be a major way of bringing about income equality even though it obviously can help. Rather, I have always believed equality of educational opportunity to be a right of all citizens in a democratic society, and that it provided benefits that were important both to the society and the individual. I also believe in equalizing occupational opportunity by breaking down artificial barriers to job entry, including undue emphasis on credentials, and by upgrading the status of low-status jobs by whatever means may be available. I clearly favor direct mechanisms for income redistribution, and I looked in vain for well-developed alternative plans from Jencks so that one might at least try tentatively to assess the possible advantages, limitations, costs, and benefits of alternative schemes. Perhaps this will be the subject of his next book.

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There are several reasons why I consider *Inequality* to be an important book, a benchmark in the study of how IQ, education, occupational status, and income are interrelated. The work is scholarly, with 23 pages of references and an earnest effort to synthesize wide-ranging hypotheses and findings by others. It is technically skillful. Two of the appendices, "Estimating the Heritability of IQ Scores," and "Path Models of Intergenerational Mobility," describe the statistical methods used to generate most of the numbers appearing in the text. The methods themselves (multiple regression and path analysis) are not new, but their application is innovative, particularly in the use of several data sets.

The book is also important because it is relevant to genuine social (as well as sociological) issues which are currently of great concern in this country. Is busing likely to reduce educational inequality between whites and nonwhites? Does it make any tangible difference, a few years later, whether a child has been in a preschool program? How much schooling should be compulsory? What mechanisms are available for narrowing the range of incomes? Responses to these and related questions are found throughout the book.

Jencks and his colleagues considered essentially four characteristics of individuals: cognitive ability (as measured by test scores and IQ), education (years of schooling), occupational status (using the Duncan scale), and income (in constant dollars). They made basic controls for sex and race but not for other demographic variables such as age and region of the country. In the appendices they made allowances for intergenerational transmission of intelligence and status.

Despite the thoroughness with which the various interrelationships and data sets are treated, the statistical conclusions of this study will be familiar in advance to most sociologists. In fact, I consider the main value of the book to be in the clarity and thoroughness with which it confirms and integrates these conclusions.

The correlations and path coefficients which link the basic variables are really quite small. For example, using Duncan's basic model for white U.S. males aged 25-64 in 1962, including education and occupation of father, IQ, etc., and allowing for measurement error (with a reasonable model for error), Jencks is only able to account for a little over one-quarter of the variation in occupational status and a little over one-tenth of the variation in income.

It is an American credo that education is the path to occupational and financial success. If this credo were true we would find a high correlation between education and income; and if it were true we would expect the range of incomes to narrow as the range of educational attainment narrows. Jencks's principal conclusions are that equal opportunity for education is an effective equalizer of incomes (essentially a statistical issue) and that direct mechanisms for redistribution are needed (essentially a moralistic issue). Jencks reviews several possible direct mechanisms and does not seem to favor a complete leveling of incomes, so that the proposals we are left with are not as radical as some of the language employed would make them seem.

Some of my responses to this piece of work may be classified as follows.

1. Question: Are occupational status and income really so weakly related to one's other attributes?

I do not believe so, for two reasons. First, we have far from exhausted the list of possible correlates with status and income—in particular, individual measures of personality and, perhaps, metabolism. The American credo involves several determinants of success other than years of schooling, and these have hardly been touched by quantitative sociology. For example, many jobs are based on the ability to persuade. This ability to

present oneself in an attractive manner may have little to do with years of schooling but may genuinely contribute to one's economic utility and rewards.

Drive, or need-achievement—capacity for work, perseverance, etc.—however expressed, has always been considered a determinant of success. If such fundamental motivations are not rewarded by some measures of tangible success they may disappear, probably with a serious impact on the economy. At any rate, it is important for us to identify more determinants of status and income, and the mechanisms by which they operate, before we risk rendering them inoperable.

Second, we have been working with models which are much too simple. The last five years have seen considerable innovation in quantitative methods in sociology, primarily in the widespread use of path analysis. The literature on education and aspirations, occupation, etc., have been a focus in the search for better path models and estimates of path coefficients. But path analysis and multiple regression will soon, I hope, be replaced by methods and models which take better account of the mechanisms of the real world.

For example, we need to recognize that, as Harrison White has pointed out in recent models, in most cases there is an assortative matching of people and jobs. The constraints imposed by this matching process do much to reduce correlations. It usually happens that the most appropriate job for a person (in terms of all his or her skills) is not available at the time the person is eligible. The job may be filled already. The person may be in a region of the country or in a smaller center of population which has fewer opportunities. And when a job is found, the range of salary (and its utility) will vary much between, say, Manhattan and rural Idaho. Thus, even if there is high consistency between qualifications and achievement within the various sets of constraints that individuals must confront, this consistency will be eroded when we ignore the constraints and pool all individuals.

I would also hypothesize that for most people, intelligence and income, etc., operate according to thresholds rather than in the continuous manner of regression analysis. Civil service examinations, for example, block out applicants whose test scores are below a certain level, and the amount by which a candidate falls short is irrelevant. High school graduation, regardless of the quality of the school or the grades earned, is a widely applied cutting point. In less formal ways for other kinds of jobs, admission or rejection is based on cutting points. In other words, the required skills and background may be related to achievement according to a step function rather than a straight (or even curved) line.

There is another possible weakness in the path or regression method of analysis. These methods assume that, say, occupational status is a linear combination of test scores and education scores (and other variables, measured and unmeasured). I suggest that in the real world these variables do not add. It may be that, for example, the prior variable with the highest (relative) value will most affect status and income. A high level of intelli-

gence may outweigh a mediocre formal education, and a lengthy formal education may outweigh a mediocre intelligence. Within the component of intelligence itself, a person with high verbal and low quantitative skills may be entirely as successful as a person who has high scores in both areas. This substitution effect may vary according to the levels of these independent variables, implying a pattern of interaction which is generally ignored by path analysts.

I am not arguing, however, that by improving our choice of variables and models we could fully account for variation in status and income; I doubt that any choice would explain more than half the variation in income. To the contrary, I think those who put all their effort into path analysis are the measurement reductionists. It is time to build upon case studies to find new ways of replicating the processes of taking on a job and an income.

## 2. Question: What is the nature of the present injustice?

Throughout the book Jencks tends to equate the elimination of poverty and drastically reducing the range of incomes. These two issues are not identical. One can imagine income distributions with little poverty but substantial ranges of incomes. If we can eliminate poverty, is there any virtue in achieving uniformity? The ethical, nonnumerical dimensions of this distinction are not adequately treated in the book.

Suppose for a moment that poverty were eliminated. Also suppose that education, etc., were distributed as at present, but income (above the minimum level) was determined completely randomly, for example by a type of lottery. In this extreme case educators, politicians, and others would clearly be wrong in relating increased education to increased income. But it is not clear to me that there would be injustice in such a system, so long as the element of randomness were made known to all. The only injustice, in other words, would derive from a myth which did not correspond to reality and might lead to inaccurate expectations and wasted efforts.

The above lottery could be extended to one which evidently would parallel the real data. For each combination of education and ability (and perhaps some other criteria) there would be an expected income. The distribution about that conditional expectation would be determined by lottery. A person might have the choice of whether or not to play the game; if choosing not to, he might be offered his conditionally expected earnings.

The parameters have not been specified, but the second lottery sounds very much like the real world. The structural differences are that most people do not realize that chance is so important a factor in their status and income (an ignorance which educational sociologists can correct) and that people do not have the opportunity to exist with their expected income (conditional or unconditional) or even a smaller "safe" amount.

In the statistical study of gambling, of course, "random" and "fair" mean virtually the same thing. Jencks concludes that even twins who are identical in education, ability, and anything else one can measure, can

expect different incomes. From my viewpoint there is nothing unfair about this difference, so long as we guarantee that each twin is above a liberal poverty line and both incomes are subjected to a graduated income tax (whose main purpose is to generate revenue according to the principle of marginal utility, rather than to equalize incomes).

Another effect merits at least passing reference in this review. Status and income are doubtless primary motivations in modern America (as in nearly all times and places), but others exist as well. Thus if the schools are to be rated on their production of economically successful people, perhaps they should also be rated on their long-term transmission or effectiveness in other areas.

Schools have noneconomic functions and, similarly, adults have noneconomic interests which they may trade for money and status. Some people would rather be small independent entrepreneurs than work within a larger organization. Some would rather remain in the town or neighborhood where they lived as children than move to greener pastures. Some would rather have flexible than fixed working hours. Some would rather work outdoors than indoors. Some receive intrinsic satisfaction from their work that is willingly taken as a substitute for higher pay. Insofar as these trade-offs are measurable they should be incorporated into realistic models.

In conclusion, I believe (and do so independently of the present book) that a substantial minimum income is needed at once and that the range of incomes should be reduced, but far from obliterated. I would be more than satisfied if the maximum income were 10 times the minimum. But the amount and mechanism of a severe reduction in range should depend partly on the functional value of those income determinants which are excluded from the models of Jencks and others. It remains to identify these variables, to understand better how they transmit their effect, and to anticipate whether, for example, the total income available for redistribution will fall because these determinants are devalued.