

FILE COPY
DO NOT REMOVE

255-75

INSTITUTE FOR
RESEARCH ON
POVERTY DISCUSSION
PAPERS

THE CHALLENGE OF DUAL AND RADICAL THEORIES OF
THE LABOR MARKET TO ORTHODOX THEORY

Glen G. Cain

UNIVERSITY OF WISCONSIN - MADISON



THE CHALLENGE OF DUAL AND RADICAL THEORIES OF THE LABOR
MARKET TO ORTHODOX THEORY

Glen G. Cain

January 1975

I am indebted to a number of people at the U.S. Department of Labor, especially Fred Siskind, and at the Institute for Research on Poverty (University of Wisconsin) for their support. Special thanks are owed to Barry R. Chiswick, Marc P. Freiman, Duane Leigh, Sar A. Levitan, and Stanley Masters. The above mentioned institutions and individuals are not responsible for errors, nor do they necessarily agree with the interpretations expressed in the report. The research reported here was supported in part by funds granted to the Institute for Research on Poverty at the University of Wisconsin by the Office of Economic Opportunity pursuant to the Economic Opportunity Act of 1964.

ABSTRACT

This paper examines new theories that have emerged during the past decade challenging the validity of current orthodox or neo-classical theories of the labor market. The new theories, which are usually referred to as "dual" or "radical" theories, focus on three types of issues: empirical failures or anomalies of the workings of the United States labor market; inadequate explanations for these failings by neoclassical economists; radical policies to correct the inequities in the labor market. An historical approach is provided to place the dual and radical theories in a larger perspective of previous schools of criticism of orthodox economic theory. Finally, a discussion of the neoclassical response to this challenge is presented, along with some suggested implications for research and policy.

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
II. A CLASSIFICATION OF ISSUES RAISED IN THE DUAL AND RADICAL LITERATURE	6
A. Empirical Generalizations About Outcomes in the Labor Market	7
B. Alternative Theories Proposed by the Dual and Radical Spokesmen	21
C. An Overview of the Major Policy Implications of the Dual and Radical Theories	24
III. AN HISTORICAL PERSPECTIVE FOR THE DUAL AND RADICAL THEORIES	25
A. The Theory of Noncompeting Groups in the Labor Market: Mill's Criticism of the Classical Economists	26
B. Marxist Economics	29
C. Institutional Economists and the Neoinstitutionalists of the 1940s and 1950s	30
D. Reverberations of the "Keynesian Revolution"	34
E. The Structuralist Debate of the 1960s and 1970s	34
IV. THE MODERN NEOCLASSICAL RESPONSE TO THE DUAL AND RADICAL CHALLENGE	36
A. Methodological and Theoretical Issues	36
B. Empirical-Theoretical Issues: Implications for Research and Policy	41
V. CONCLUSIONS	84
FOOTNOTES	91
BIBLIOGRAPHY	95

APPENDIX: "A Statistical Theory of Discrimination in Labor Markets" (with D. J. Aigner) (available as Institute for Research on Poverty Discussion Paper no. 228-74)

THE CHALLENGE OF DUAL AND RADICAL THEORIES
OF THE LABOR MARKET TO ORTHODOX THEORY

Glen G. Cain
University of Wisconsin

I. Introduction

Labor economics is currently a controversial field within economics, perhaps an endemic condition for a field that covers such topics as income distribution, unions, unemployment, and discrimination. Today, as in the past, the combatants are grouped by their ideological as well as their theoretical positions, and it is often difficult to sort the participants neatly into any one group. Nevertheless, since the time of Adam Smith, the classical, and then the neoclassical, school of labor economics has been a common target, representing the orthodoxy to be challenged. This paper examines the recent assault on the conventional neoclassical school by a group of labor economists in the United States who are referred to as radical and dual labor economists. Treating the challenges as a single group distorts reality, but it is often expedient to do so. I justify the treatment on grounds that the two groups, dualists and radicals, share much in common and that there is as much or more diversity within the two positions as between them.

The challenge that the dual and radical theories of labor markets present to conventional theory supports a hypothesis about economic doctrines expressed by Leo Rogin:

...new systems [of economic doctrines] first emerge in the guise of arguments in the context of social reform. (Rogin, 1956, p. XIII).

Although it is a thesis of this paper that the dual and radical theories are continuations of older debates, their present form began to emerge in the 1960s. It was a time when the movement for social reform mainly involved the "war on poverty" and the drive for full participation in the economy by minority groups, including women who may be said to constitute an "economic minority." Dissatisfaction with the pace and progress of reform in these areas and dissatisfaction with the conventional analysis of the problems and their remedies have led to "arguments" within the economics profession. Among labor economists, the "arguments" took the form of a challenge, mainly by younger labor economists, to orthodox labor market theory. They were allied with economists who challenged other aspects of established economic theory and practices; many of whom are found in the Union of Radical Political Economists. No doubt the emergence of radical economists was related to the protest against many noneconomic aspects of American society in the 1960s, particularly U.S. war policies, but these connections will not be pursued here.

There is today a predominant school of thought in the economics profession in the United States. "Neoclassical price theory" is probably its briefest description, and the terms "conventional" or "orthodox" theory will here be used as synonyms. When these terms are applied to macro-economics, however, they may need a flexible definition to cover several competing theories that evolved from the Keynesian challenge to classical macro theories.

In the labor market, the fundamental economic questions are the determination of wage rates, quantities of labor employed, and the resulting income distribution. Neoclassical analysis of these issues consists of, first, a theory of demand--the marginal productivity theory--based on profit-maximizing behavior of employers; second, a theory of supply that is based on the theory of utility maximization of workers. Labor supply theory may be more familiar when the utility maximization model takes the form of (1) the theory of investment in human capital, which determines one's skill or occupation--the kind of work supplied--and (2) the theory of labor/leisure choices, which determines the amount of one's labor supply. (There are a number of new developments, modifications, and extensions in neoclassical theory, and these will be mentioned later.)

In labor market applications, neoclassical theory operates on at least two levels. First, it is a framework for analysis and, associated with this purpose, a framework for describing and categorizing observations about labor market behavior. The framework implies a set of methods and techniques of analysis--for example, marginal analysis of behavioral relations in which income and prices are key variables. Second, the theory consists of a set of substantive behavioral propositions--predictions and hypotheses about behavior. There are varying degrees of unanimity about these predictions, depending on the subject and context of application and on whether the hypotheses refer to qualitative predictions or to predictions that risk a quantitative estimate (in addition to sign) of some parameter. Agreement with the

substantive behavioral propositions generally implies some measure of acceptance of the assumptions of the theories--agreement, in other words, with the assumed real-world conditions under which the theories are presumed to have validity. (Let me pause here to make clear that I am deliberately emphasizing the area of unity among the conventional, neoclassical labor economists, even though volumes could be written about their disagreements regarding theory, measurement, and policy positions.)

The foregoing discussion may be illustrated with three specific examples of economic changes about which orthodox labor economists would make identical qualitative predictions. They would predict (1) a reduction in labor supply by working members in poor households (not on welfare) in response to a negative income tax program, (2) an increase in the net in-migration to a region of the country where relative wages increased because of some exogenous and "permanent" increase in demand, (3) a decrease in overall employment in the low-wage industries affected by increases in legal minimum wages.

The prevailing neoclassical view of the effect of a negative income tax, for example, is that a decrease in labor supply stems from a prediction that both the increase in transfer-payment income and the higher (implicit) tax rate (or offset rate) on earnings will lead to decreases in time spent at work. The agreement in the profession about this prediction reflects the acceptance of the underlying model and an acceptance of a number of assumptions made in its application--one

such is the assumption that tastes for work (or leisure) will not on average change appreciably.

This example and others could be explained more fully to support my claim that there is a general acceptance by the neoclassical economists of certain methods and assumptions as they apply their theory to labor markets. The main topic of this paper is, however, the dual and radical (hereafter, D-R) theorists' challenge to this conventional theory. At this point I want only to establish two points: (1) that the challengers are correct in their contention that there is a dominant "establishment" doctrine (or theory); and (2) that the critics contest both the methodology and the collection of predictions and substantive hypotheses of neoclassical labor economics.

My principal motivation for examining the D-R challenge to orthodox theory is to determine what implications emerge for research and policy actions. The emphasis is, however, on the positive (as distinct from normative) aspects of controversies about neoclassical research. The D-R spokesmen may object that this emphasis neglects examination of the alleged normative content of neoclassical theory and does not pay attention to important topics that neoclassical economists have chosen not to study. These criticisms are justified to some extent. I do not address some of the rather esoteric and abstract philosophical and ideological issues raised in the D-R literature, although they may be hidden in the paper, perhaps without my awareness.

II. A Classification of Issues Raised in the Dual and Radical Literature

It is convenient to concentrate on three types of issues raised by the D-R spokesmen, which may be briefly designated as empirical, theoretical, and policy-related. First, the D-R spokesmen argue that the facts describing the outcomes and processes in the labor market are not reported fully and accurately, or not interpreted in a manner that reveals the pervasive failures in the workings of the labor market. Second, they challenge the theories and methods used by conventional theorists to analyze these outcomes and processes. Third, they advocate policies that may properly be labeled radical--policies that call for major changes in the economic system and/or left-liberal or socialistic policies.

Consider the following three quotations from D-R spokesmen.

1. The United States uncovered an "urban crisis" during the 1960s. . . . Ghetto residents were poor and underemployed. . . . By 1970, three principal economic perspectives were evolving to "explain" ghetto employment problems: orthodox economic theory, dual labor market theory, and radical economic theory. . . . Although the three analytical explanations of urban poverty and underemployment described and sought to explain the same reality, they drew from and implied fundamentally different theories of income determination and distribution. (Gordon, 1972, pp. vii-viii.)

2. Towards the end of the 60s, there was a growing disillusionment with the efficacy of skill augmentation as a means of redistributing earnings. Consequently, alternative models have begun to emerge, many of which concentrate upon the demand for labor as a restrictive force upon earnings of minorities and lower class workers. In particular, such theories as the dual labor market and the job competition model, focus attention upon the type

of jobs to which disadvantaged workers are restricted, rather than the skills which such workers possess or lack. The policy implications of such models are entirely different from those of the human capital model. Rather than concentrating upon increasing the skills of certain groups, policy should be aimed at job distribution, according to these theories. One such direct proposal in this vein is the Galbraith-Kuh-Thurrow quota system. (Lucas, 1972, p. 40.)¹

3. The research of the 1960s has told us nothing about the causes of poverty which are to be found in the basic system-defining institutions of capitalism: labor markets, class, and the state. The orthodox research has merely provided estimates of the differential importance of various individual characteristics associated with the poor. This research is quite consistent with the proposition that the poor are poor because of some individual failure, and it has received widespread acceptance and support because it has been conveniently supportive of existing economic arrangements and our prevailing ideology. (Wachte1, 1972, pp. 193-194.)

Many other quotations could be used to show the pattern of, first, sharp criticism of what is going on in the labor market; second, a rejection of existing theories, which have purported to explain the labor market operations; third, a call for new and more radical policies. Let us examine these categories of challenges more closely.

A. Empirical Generalizations About Outcomes of the Labor Market

It is useful to distinguish between two types of facts that contribute to controversy. The first are those that indicate some sort of hardship or distress, like high unemployment rates and widespread poverty. The facts about these problems may not be in dispute, and in some cases the orthodox view may deny that there is any "mystery" or anomaly about the explanation for these facts.

A second type of descriptive empirical findings about the operations of the labor market may reflect, if not baffling puzzles to orthodox economists, at least unresolved and inadequately treated problems. These "puzzles" may or may not concern matters of hardship or distress, just as the hardship facts may or may not be anomalies. It turns out, not surprisingly, that the empirical challenges raised by the D-R theorists usually concern the overlap--that is, disputed hypotheses concerning empirical indicators of economic distress and inequity.

Listed below are some of the main problem areas, along with comments intended to clarify the nature of the challenge to the neoclassical tradition. The reader should be warned, however, that the challenges are matters of controversy and the mere listing does not imply any general (or my personal) agreement with the points being made. The neoclassical response to this challenge is taken up in section IV.

1. The Persistence of Poverty

The most important social problem motivating the D-R economists is poverty. The economics profession was not prepared for the statistical documentation of the extent of poverty within the "affluent society" of the 1960s. Spurring the D-R economists was the persistence of poverty in spite of the political commitments to full employment and a variety of programs, particularly those established by the Equal Opportunities Act but also the many antipoverty programs of the Department of Labor and DHEW. (See Gordon, especially Chapter 7.)

Poverty is, however, a broad and general problem, and it was analyzed in terms of several specific problems, the most important of which are listed below.

2. The Failure of Education and Training Programs

The D-R critics of human capital theories have argued that education and training programs failed to deliver their promised cure for poverty. (See Lucas, 1972; Gordon, 1972, Chapter 8 especially; Thurow, 1972; Thurow and Lucas, 1972; Harrison, 1972; among many citations that could be listed.) Thus:

To some of those [dual and radical] economists studying ghetto labor markets in the 1960s, it often appeared that characteristics which economists had conventionally associated with "productivity"--like years of schooling and vocational training--had almost no influence on the employment prospects of large numbers of urban employees. (Gordon, 1972, p. 44).

The D-R economists found support in the research of sociologists who reported pessimistic findings about the effect of schooling resources on educational achievement (see, the "Coleman report," 1967; and many contributors in Mosteller and Moynihan, 1972). More direct support is contained in the widely publicized findings by Jencks (1972) of the alleged ineffectiveness of both educational resources and educational achievement on income and occupational attainment.

There are, indeed, some puzzles here for conventional theorists who have studied the relation between education and labor market performance. (See Hollister, 1971.) One puzzle is the following: labor economists have consistently found a positive relation between

years of schooling and earnings. The theory of human capital provided both an explanation for this relation and a technique for measuring it in terms of rates-of-return. The positive relation may be said to reflect investments made at the "extensive margin"--it is more years of schooling that has a "payoff." However, the dissenting view mainly focuses on the intensive margin. Most social science researchers (including some economists) argue that existing empirical evidence fails to support a positive relation between educational resources and educational achievement, holding constant years of schooling. (Again, see Coleman, 1967; Mosteller and Moynihan, 1972; and Jencks, 1972.) Even Henry M. Levin, a long-time and effective critic of the pessimistic reports of Coleman and Jencks, has recently arrived at a pessimistic verdict of the record of educational programs to improve education and earnings (Levin, 1975). That is, at the "intensive margin," more resources (like more expenditures, better physical facilities, more teachers per pupil) do not appear to raise educational achievement levels as conventionally measured.

Although the empirical disagreement appears to involve a divergent result regarding the intensive margin, rather than with a refutation of the labor economists' traditional findings about the extensive margins, per se, the challenge to orthodox economists is a real one. If educational resources have no effect on educational achievement (like test scores), then we have a right to be suspicious of the positive relation between the inputs of educational resources and the ultimate outcomes of performance in the labor market. Indeed, the D-R economists do suggest that the relation between education and productivity is substantially spurious. (See point 3 below.)

3. The Use by Employees of Educational and Training Criteria
for Making "Irrational" and "Discriminatory" Hiring Decisions

Related to point 2 is the claim by D-R spokesmen that the representatives of the human capital school mislabeled the positive relation between education and earnings as a "productivity relation." Against this view of education as productivity-enhancing the D-R economists claim that education reflects only a screening device or a certificate of a set of attitudes and traits that employers find attractive, such as skin color, cogentiality, and pliability. (This claim is explicit in Gintis, 1971; and Thurow, 1972, and receives support in Berg, 1969.) Arrow, 1973a, provides a neoclassical model in which education is only a proxy for potential productivity, but this model redefines the investment character of education as "information"; it does not deny the investment character. A denial either of the "real" productivity of education or of the potency of the informational content of educational attainments does challenge the orthodox assumptions about rational behavior (profit maximization and marginal productivity theories) and/or about the degree of competitiveness in the economy. The nature of the educational investment and the source and extent of its links to market productivity are very live issues today.

4. The Income Distribution Remaining As Unequal Now As
Twenty Years Ago

Related to the persistence of poverty is the stability of the shape of the income distribution, which is more unequal than are the

distributions of most measures of "ability" (like I.Q. or physical attributes) and educational attainment. In particular, the relative variance in the distribution of educational attainments has narrowed considerably over time while the relative variance of income has narrowed hardly at all. (See Thurow, 1972. Also the Economic Report of the President, 1974, Chapter 5, discusses this puzzle, and attempts to provide an orthodox explanation.) The distribution of income is often subject to conflicting measures and interpretations, however. The poor have received increasing amounts of income-in-kind (such as food stamps) in recent years, which are not included in the customary income statistics. On the other hand, imputed income from various types of assets (such as own-homes) are also omitted from the statistics, and this form of income is more important for the rich. The claim that the income distribution has been relatively unresponsive to the marked changes in the distribution of educational attainments is, therefore, probably justified. This claim challenges either the human capital theories or (again) the assumptions most orthodox economists make about the degree of competitiveness in the economy.

5. The Effects of and Explanation for Discrimination in Labor Markets

Discrimination against black and other nonwhite ethnic groups and against women are viewed in D-R theories as demonstrations of the failure of the orthodox theory of competition and, as a corollary by some, of the successful predictive power of Marxian-type theories of

exploitation. (See Thurow, 1969.) At a minimum, the large and persisting differential in earnings and wages between white and black males and between males and females are challenges to the orthodox economists. Both Becker (1971) and Arrow (1972, 1973b) pointed to the tendency for any discriminatory wage differential to wither away according to the neoclassical model along with the standard competitive assumptions. And, as Arrow comments: "Since in fact racial discrimination has survived for a long time, we must assume that the model . . . must have some limitation." (1973b, p. 10.)

The questions raised by the general problem of discrimination are sharpened by several specific empirical findings, most of which have been noted by D-R economists:

a. The decline in black male labor force participation rates relative to white males in recent years, even on the part of prime-age males. (See Michelson, 1969, and Robert Aaron Gordon, 1973.)

b. The near-constant ratio of black-to-white average male income (or earnings, or earnings among full-year, year around workers) from 1950-1966 or so. Before the upturn in black male incomes in the period from 1967 to 1971, these ratios indicated no relative improvement in black male incomes, despite the trends in society at large that seemed to indicate a reduction in discrimination. (See Freeman, 1973, for an orthodox and generally optimistic presentation of these statistical trends. But note also Robert Aaron Gordon's comments (1973) about Freeman's article, including Gordon's statement

that he was "surprised that the author could reach the end of his paper without mentioning once the growing literature on the dual labor market," p. 123.)

c. A decline in the ratio of black-to-white male income with higher educational attainment, consistently found in cross-section data of the census years, 1940, 1950, and 1960. (See Zeman, 1965; Becker, 1964; Hanoch, 1967--all representing the orthodox tradition.) Recently, however, some orthodox economists have suggested a reversal of this relationship, that earnings of black males with higher levels of education are rising as fast or faster than the earnings of comparably educated white males. (See Welch, 1973; Freeman, 1973; and Weiss and Williamson, 1972.) These findings are mainly attributable to the favorable earnings of the college-educated among the younger cohorts of black males. Whether the findings persist over time and mark a permanent reversal of the earlier relationship, remains to be seen.

d. The flat age-earnings profile of black males relative to white males as revealed by cross-section surveys. (See Hall, 1971.) The earnings gap between black and white males does increase with age in the cross-section data, but this is not conclusive evidence that any cohort of black males meets more severe discrimination in its older ages. Data from the 1950, 1960, and 1970 Censuses have, in fact, been analyzed by Freeman (1973) and Chiswick (1974) and show cohort profiles that rise at least as rapidly for black males as white males, from age 30 to 60 (roughly), although the blacks begin at markedly lower bases. The age-income profiles are important for

measuring discrimination in on-the-job investment in training. (As Becker, 1964, and Mincer, 1962, have shown, such investments typically produce an inverted U-shaped age/earnings profile.) The D-R spokesmen argue that the older black workers will fare relatively worse because of the "pathological" job turnover of low-wage (especially black) workers, along with poor working habits (see point 7 below) and employer discrimination.²

e. The stagnant trend in earnings and occupational attainments of women relative to men during recent years. See Zellner, 1971, and Weisskoff (now Blau), 1971, for evidence and discussion of this point. The substantial and steady growth in female labor force participation and a variety of indicators of a greater commitment to market work by women has not been accompanied by an increase in the proportion of women in professional and technical occupations or an increase in the ratio of female-to-male earnings of full year, year around workers. Associated with this is the slower growth in female educational attainment compared to men from 1940 to 1973 (see Special Labor Force Report, No. 161, 1974) and a much slower growth in graduate degree attainments of women as compared to men.

6. The Roles of Monopolies, Unions, and Other Sources of "Protected" Labor Markets

Many of the politically conservative, orthodox economists and the "left-liberal" D-R economists might agree on the economic effects of several institutional barriers to competition. Both groups

generally would agree that employer and labor monopolies, and governmental collusion with these power groups, tend to produce distortions in what gets produced, a reduction in total output, and inequities in the distribution of income. The role of unions would be most debatable among the D-R economists. They would probably criticize the monopolistic practices of "business" unionism, but social reform unionism would be viewed differently, as would those unions that deal predominantly with the lowest-paid workers, such as the farm workers' union led by Caesar Chavez. Indeed, the positive and normative aspects of unions continue today, as they have historically, to divide conventional economists.

Both D-R and orthodox economists would view as plausible the persistence of wage (and income) differences in markets that are sheltered from competitive forces. The dual labor market is precisely a case in point, wherein the primary market is protected in its privileges and advantages by a combination of monopoly enterprise and "business" unionism. The dual economy discussed in the literature on underdeveloped economies provides another example of these forces. Moreover, Todaro (1969) and Harberger (1971) have shown how this duality produces relatively high levels of unemployment. (Briefly, unemployment is a consequence of workers in the unprotected sector periodically leaving their poor jobs and "searching" and "waiting" for good jobs to open in the protected sector. This model will be referred to later in this paper.)

Thus, the D-R and orthodox economists are not necessarily far apart on the validity of the dual sector model at the conceptual level. Their disagreement mainly concerns the empirical question of whether, in fact, the degree of monopoly is sufficient to make untenable the assumptions of competition made by orthodox economists for most empirical work dealing with the current U.S. economy. The D-R analyses of "internal" labor markets (see section B.2) often claim that competitive models are less realistic and less useful for predictive purposes than models that emphasize

- a. the bureaucratic complexities of large organizations;
- b. the monopoly power these organizations maintain;
- c. the suppression of profit-maximizing behavior in favor of political goals that serve to consolidate the employers' social (as well as economic) power and legitimize their authority.

7. The Role of Psychological Variables

There are passages from the D-R literature in which low wages and unstable employment appear to be "blamed" on a set of attitudes and motivations (let's call these "tastes for work") on the part of the workers--tastes and habits that are not conducive to a commitment to steady employment, to the firm's output goals, or to upgrading oneself. For example, Gordon, 1972, p. 48, quotes Piore, who comments on the differences between today's poor population, many of whom are migrants into cities from poor rural areas, and the earlier poor, who "made

their transition at a time when the penalties for unstable work habits were more severe. Public welfare programs have since reduced the costs of life without work. . . ." Piore discusses several reasons why there has been "a decline in the alternative behavioral models to which the very unstable are exposed and in the number of social groups that can serve as waystations in their transition to stable life styles. For Negroes, suburbanization combined with segregated housing patterns may have had an even stronger adverse impact upon the contacts necessary for the development of stable work habits." A similar theme is expressed in Doeringer and Piore.³

These views are close to the school of thought that sees the poor as victims of a "culture of poverty." But with the D-R spokesmen, as with other social scientists who have, with varying degrees of emphasis, maintained or defended this viewpoint, the issue is complex and certainly does not lend itself to simply one-way causation models within specified time frameworks.⁴ Moreover, the debates about "culture of poverty" theories have often turned into ideological disputes, making it difficult to analyze the empirical and theoretical issues.

The interpretation of the D-R hypotheses about "tastes for work" may be expressed, however, in a way that largely avoids the ideological controversies and that focuses on a major gap in neoclassical models of labor market behavior. Conventional economists have customarily viewed "tastes" as exogenous and as one of the (unexplored) causal variables explaining such labor market achievements as employment, wage earnings,

and occupational achievement. The contribution of the D-R theorists lies not in reiterating the potential importance of tastes in this role but rather in pointing out how tastes may be endogenous and a result of one's labor market achievements. Thus, the effects of discrimination, other systematic factors, or even random factors that start workers off in the secondary sector (that is, in "bad" jobs), can shape tastes in an anti-work direction and thereby reinforce the disadvantaged position of low-wage workers. The model has an aspect of the "vicious circle" or "self-fulfilling prophecy" to it. (See Liebow, 1967; Moynihan, 1968; Piore and Doeringer, 1971, especially pp. 133-134 and 175-177; and Piore, 1970.)

8. The Alienation of American Workers

A tremendous amount of attention by the popular media and by social scientists has been given to the issue of psychological dissatisfaction workers feel towards their jobs and their economic roles in society. Work in America (1973), the commission report sponsored by the Department of Health, Education, and Welfare, epitomizes the combination of scholarly and popular attention, but books by Harold Sheppard (1972), David Jenkins (1973), Studs Terkle (1973), Levitan and Johnston (1974), and Jerome Rosow (1974), could also be mentioned.

What is the connection between this issue and the debate between D-R and orthodox theories? At one level, it could be claimed that a pervasive state of alienation by workers reinstitutes and to some extent validates Marxian theories of the workings of industrial

capitalism. A number of D-R spokesmen indeed make this connection. Alienation as an outgrowth of highly industrialized nations, with particular although not exclusive reference to the United States, is brilliantly discussed in Goodwin's book, The American Condition. The fact that Goodwin places the issue in a much broader social and historical context and that he does not mention the D-R economists or their work may elevate his testimony to a more impressive level of support for the D-R position.

The issue may be discussed, however, at a less sweeping and less philosophical plane. Apparently, the claim that alienation or dissatisfaction among U.S. workers is either widespread or growing is disputed. (See below.) If, however, the claim were correct, the challenge to orthodox theory would be the following: Why has the market not responded to the workers' tastes and preferences either by a redesign of jobs and upgrading of working conditions or simply by appropriate wage rate compensations?

It is a fundamental principle of economics that although individual workers, like everyone else, would like "more of everything," limited resources impose constraints, and workers will seek an optimal balance between nonpecuniary and pecuniary rewards from work. Search efforts by workers and employers and worker mobility should, over time, tend to produce such an optimal balance. Why, then, in a context of secular rising real wages, should the resulting total package of rewards be less satisfactory?

Perhaps it is not. A number of recent works present arguments and empirical evidence counter to the claims that job dissatisfaction is widespread and increasing over time. See Levitan and Johnston (1974), Flanagan, Strauss, and Ulman (1974), Hamermesh (1975), Henle (1974), Strauss (1974), and Wool (1973). In view of the doubts about the facts of the issue and because a detailed analysis of the evidence lies largely outside the jurisdiction of labor economics, I will not pursue the issue further.

9. Summary

The foregoing list of empirical generalization about outcomes of the workings of the labor market covers, I believe, the main bill of particulars in the D-R indictment. Let us turn now to their theories of how the labor market operates.

B. Alternative Theories Proposed by the D-R Spokesmen

Unfortunately, there is no well-articulated theory that expresses the views of the D-R spokesmen, which tend to be "arguments in the context of social reform," to repeat Rogin's phrase. Each D-R viewpoint is by itself sketchy or vague, and together they are often conflicting. In exploring the theoretical content of the D-R writings, I take two approaches. First, I attempt to find connections between the D-R literature and previous challenges to orthodox theory. Some familiar bells may ring, and some of the strengths and weaknesses of the D-R propositions may be illuminated. Second, I examine specific empirical and policy problems that define clashes

between D-R and orthodox theories. These approaches to a survey of the D-R challenge are taken up in sections III and IV.

At this juncture it may prove useful to list several of the D-R spokesmen along with a brief description of their central ideas.

1. Thurow (1971) and Thurow and Lucas (1971)

Perhaps closest to the orthodox position is the "job competition" theory that these two economists propose in place of the orthodox "wage competition" theory.⁵ Its main elements are (a) the number and type of job slots are technologically determined, and (b) the workers' skills (that is, their human capital) and their wage offers (or their reservation wages) are nearly irrelevant in determining the number and type of job positions actually filled. Thus, not only is the supply side of the labor market downplayed, but technology (engineering?) rather than the economics of pricing are said to dominate the demand side. (c) Queues of workers at fixed wages (fixed by tradition?) constitute the supply of labor, and the employer's estimation about the worker's trainability and adaptability determines which workers are hired. Fluctuations in macro policies will lead to changes in the demand for labor and thus to changes in the lengths of the queues. The theory emphasizes the within-firm (or internal) labor market as the locus of decisions about allocations, promotions, and on-the-job training--all of which are relatively insulated from the external labor market. In many respects, this theory is similar to the dual labor market theory mentioned next.

2. Doeringer and Piore (1971)

The two economists most often associated with the dual labor market theory are Doeringer and Piore. Their writings provide a link to the older theories of John Dunlop (their teacher at Harvard) and Clark Kerr, who first gave prominence to the concepts of internal and external labor markets. (Dunlop, 1957; Dunlop, 1958; and Kerr, 1954a.) Dunlop and Kerr viewed the growth of large firms and unions as promoting internal (within-firm) labor markets that were only weakly connected to the external (between-firm) labor markets.

Doeringer and Piore define a primary labor market as one composed of jobs in large firms and/or unionized jobs, which tend to be better jobs--higher paying, more promotion possibilities, better working conditions, and more stable work. The secondary labor market, which roughly overlaps large sections of the external labor market, contains the low-paid jobs that are held by workers who are discriminated against and who have unstable working patterns. The discussion of the dual labor market tends to be merely descriptive, and perhaps descriptive only of polar cases. The theoretical ideas are similar to those mentioned above in connection with Thurow and Lucas--the demand-determined allocation of jobs and the downgrading of human capital characteristics as determinants of wage levels. In addition, attention is given to the roles of employer discrimination and of the worker's attitudes, motivations, and work habits as mutually reinforcing determinants of a worker's assignment (and confinement) to the primary or secondary sector of the labor market.

3. Wachtel (1972), Edwards, D. Gordon, Reich (1973a), and Franklin and Resnick (1974)

The radical, segmented, and/or stratified labor market theory expresses a more explicit critique of capitalism, acknowledges its ties to Marxian dialectical analysis, and emphasizes class conflicts. The dual labor market idea is sometimes expressed in terms of an analogy with an underdeveloped economy or even with a colony that is exploited by an imperialistic primary economy. Radical theories are similar to dual labor market theories in drawing upon sociological analysis of institutional change and power relations and upon psychological analyses of the determination of workers' (and employers') attitudes, preferences, and motivations.

There are many names omitted from the foregoing list of these three sets of ideas contained in the D-R literature. And, to repeat, no systematic statement of the theories was attempted, partly because I believe a consistent statement is impossible and partly because the ideas may be conveyed below by the discussion of their historical antecedents and empirical-policy issues.

C. An Overview of the Major Policy Implications of the D-R Theories

One set of policies advocated in the D-R literature concentrates on the labor market itself; another deals with the larger issues of power relationships and non-labor-market institutions in society. The first set of policies is most clearly distinguished, as indicated in the Lucas quotation above, by a focus on the demand side of the labor

market. Specifically, public employment, wage subsidy, and antidiscrimination programs are advocated. Intervention on the supply side of the market, particularly the human-capital-investment programs of education, training, and job search assistance, is de-emphasized if not rejected.⁶ The demand-side intervention is related to the importance of internal labor markets in the D-R theories. Finally, attention is given to the need for expansive macro policies to provide full employment, but there are not necessarily any important differences with the orthodox economists on this point.

A second set of policies advocated by the radical economists is less specific. They include pre-labor-market "conditioning" of the "consciousness" of people, perhaps calling for a reorganization of schools and other community institutions. (See Bowles, 1971; and Gintis, 1971.) They may also advocate that workers gain a more dominant role in governing their work--thereby combating alienation and partly achieving a general realignment of political power.

III. An Historical Perspective for the

Dual and Radical Theories

The D-R theories, as they are now expressed, are stronger in their criticisms of neoclassical theory than they are in advancing a coherent self-contained theory as a replacement. Criticism of classical and neoclassical theory has a long and, in many instances, distinguished history, so casting the D-R writings in this mold can be complementary. To the extent that the issues raised by the D-R theories have been raised

before (even though in different terms) and remain unresolved, the challenge is all the more compelling. On the other hand, if the issues have been satisfactorily answered before, the challenge is less compelling. In either case, an historical perspective can be informative.

A. The Theory of Noncompeting Groups in the Labor Market: Mill's Criticism of the Classical Economists

In my view, the importance and prevalence of noncompeting groups offers the single most basic criticism of the operations of the labor market and of the application of competitive assumptions by neoclassicists. This criticism is fundamental to the D-R challenge. The degree of inequality in earnings is difficult to reconcile with the neoclassical model of a competitive economy, even in models that incorporate innate ability and acquired human capital. It is fitting that two of the greatest names in the history of economic thought, Adam Smith and J. S. Mill, may be referred to for an early expression of this basic problem. In Mill's words:

A well known and very popular chapter in Adam Smith [Wealth of Nations, Book I, Chapter 10] contains the best exposition yet given of [wage differentials]. . . . The differences, he [Smith] says arise partly from the policy of Europe [mercantilism], which nowhere leaves things at perfect liberty and partly from certain circumstances in the employment themselves. . . . First, the agreeableness or disagreeableness of the employments themselves; secondly, the easiness and cheapness, or the difficulty and expense of learning them; thirdly, the constancy or inconstancy of employment in them; fourthly, the small or great trust which

may be reposed in those who exercise them; and fifthly, the probability or improbability of success in them. (Mill, p. 369.)

With allowance for the modern theorist's elaboration of Smith's second point expressing the theory of investment in human capital and of his fifth point expressing the factor of risk-taking, and with the abandonment of the fourth point (or translation of it to a rent concept), the modern orthodox theory of the supply of labor is not very much different from Smith's. Mill's response to Smith's theory is also justly famous:

These inequalities of remuneration, which are supposed to compensate for the disagreeable circumstances of particular employments, would under certain conditions, be natural consequences of perfectly free competition: and as between employments of about the same grade, and filled by nearly the same description of people, they are, no doubt, for the most part, realized in practice. But it is altogether a false view of the state of facts, to present this as the relation which generally exists between agreeable and disagreeable employments. The really exhausting and the really repulsive labors, instead of being better paid than others, are almost invariably paid the worst of all, because performed by those who have no choice. . . . The undesirable [laborers] must take what they can get. The more revolting the occupation, the more certain it is to receive the minimum of remuneration, because it devolves upon the most helpless and degraded, on those who from squalid poverty, or from want of skill and education, are rejected from all other employments. Partly from this cause, and partly from the natural and artificial monopolies. . . , the inequalities of wages are generally in an opposite direction to the equitable principle of compensation erroneously represented by Adam Smith as the general law of the remuneration of labor. The hardships and earnings, instead of being directly proportional, as in any just arrangements of society they would be, are generally in inverse ratio to another. (Mill, p. 372.)

After an absorbing discussion of the effects of educational prerequisites to favored jobs and the occupational advantages of "social rank"---"a class of considerations which Adam Smith, and most other political economists, have taken into far too little account"---Mill returns to Smith's reference to the restrictive practices of the guilds and concludes:

So complete, indeed, has hitherto been the separation, so strongly marked the line of demarcation, between the different grades of laborers, as to be almost equivalent to a hereditary distinction of caste; each employment being chiefly recruited from the children of those already employed in it, or in employments of the same rank with it in social estimation, or from the children of persons who, if originally of a lower rank, have succeeded in raising themselves by their exertions. (Mill, p. 377.)

Mill ended his analysis of the problem of noncompeting groups with the hope that general education for and lower birth rates by the lower classes would bring an end to, "The inequality of remuneration between the skilled and the unskilled [which] is, without doubt, very much greater than is justified. . . ."

Today, we might agree that the inequality is only "much greater" rather than "very much greater" than justified. If the D-R theories can help us determine what part of these inequalities is truly equalizing of skill and investment differentials, what part is attributable to "artificial" monopolies, and what part to the socialization processes that stratify society into noncompeting groups, it will have served us well.

B. Marxist Economics

If a significant part of occupational wage differentials are caused by the stratification of workers into noncompeting groups, as Mill argued, the basic question for orthodox economics is why the forces of competition do not erode the barriers and leave only productivity sources of stratification, with due allowance for transitory disturbances. The Marxist response, which appears in the D-R literature, is that competition is stifled by monopoly capitalism, allied with a compliant government. An attendant result is the growing bureaucratization of industry, which intensifies the workers' alienation and, for a time, smothers their protests.

Although there are several strands of Marxist economic doctrine in the D-R theories, the substance is distinct from the style of the D-R position is much closer to the institutionalists (or neoinstitutionalists), who will be discussed below. The core of Marxian economics lies in the labor theory of value, the polarization of the economy into enemy camps of employers and workers, and a complete rejection of the operation of competitive forces to check the exploitation of workers by employers. None of these extreme positions appears to be adopted in the core of D-R analyses. They accept the basic idea of the scarcity of all factors of production--labor, land, and capital--and appreciate the role of factor payments in allocating resources. The work force is acknowledged to be segmented into at least two groups, only one of which is believed to be exploited.

The current concept of workers' alienation also appears to differ from Marx's. As Goodwin (1974) writes:

[For Marx:] The alienated character of work for the worker appears in the fact that it is not his work but work for someone else, that in work he does not belong to himself but belongs to another person. (p. 26)

A view closer, I believe, to the D-R position is (again from Goodwin):

The principal source of today's alienation is not a ruling class but a social process dominated by bureaucratic institutions that have transcended traditional concepts of ownership--that are unowned. (pp. 26-27)

Class conflict is given some emphasis by the D-R spokesmen. They explicitly reject the "harmony of interests among all economic actors, whether employers or employee," which is how Gordon represents the neoclassical position (1972, p. 33). Gordon's representation will be questioned later in this paper.

C. Institutional Economists and the Neoinstitutionalists of the 1940s and 1950s

It is, perhaps, a small step from a neoclassical explanation of the workings of the labor market in terms that deal with "equilibrium" outcomes to rationalizing these outcomes as "natural," and from there to a justification of the process. The institutionalist school reacted against neoclassical economics partly on grounds that it served as an apologist for laissez-faire economics. (See Tolles, 1965.) The movement occurred from around 1890 to 1930, and it offers an interesting antecedent of the current D-R challenge. Then, as now, there were objections to the marginal productivity theories that determine

equilibrium outcomes in models assuming perfect competition. There was explicit attention to the empirical evidence of hardship and distress experienced by a large segment of the working class, a secondary sector composed mainly of the "new" immigrants from Southern and Eastern Europe. The primary sector of the labor force consisted mainly of "native" Americans, who sought with some success to protect themselves from the labor competition of the immigrants by various discriminatory and exclusionary practices.

Another parallel between the institutionalists, like Thorstein Veblen, John R. Commons, Henry Seager, and W. C. Mitchell, and the D-R economists lies in their policy orientation. Social reform movements during the period 1900 to 1930 with which the institutionalists participated included (1) protective legislation, intended to benefit the "secondary" labor force, (2) trade unionism, mainly beneficial to the "primary" labor force, and (3) trustbusting and governmental regulation of industry, which was presumed to benefit society as a whole.

On a methodological level, the institutional economists reacted against the orthodox position in a number of constructive ways. Their distaste for abstract theorizing led to the pioneering empirical research of Mitchell. The reaction against the narrow "economic man" models resulted in the classic critiques and scholarship of Veblen and Commons, who, although dissimilar, were alike in their infusion of psychological, sociological, historical, and legal materials into their economic research and in their emphasis on growth and change rather than on static analysis.

For our purposes, this thumbnail sketch of the institutionalists is interesting because the steps in its development were repeated by the D-R school. First, there was a recognition of compelling social problems; second, a dissatisfaction with the neoclassical analysis--or lack of analysis--of these problems; third, a development of eclectic, alternative research approaches; and finally, advocacy of social reform. Both schools were influenced by Marxism, although for neither was it the principal component. On this dimension, the range of institutionalists was quite wide---spanning the anti-Marxist Commons (and later Selig Perlman) to the socialist Webbs. The range of the D-R group is similarly wide.

The influence of the neoinstitutionalists of the 1940s and 1950s on the D-R economists has been noted by others (Doeringer, 1967; Marshall, 1974).⁷ Most labor economists during the post-World War II period fell into this classification, and many of the D-R labor economists were their students. A list of some of the influential labor economists would include E. Wight Bakke, Neil Chamberlain, John Dunlop, Lloyd Fisher, Frederick Harbison, Clark Kerr, Richard Lester, Ray Marshall, Charles Myers, Herbert Parnes, Lloyd Reynolds, Arthur Ross, and Lloyd Ulman.

The neoinstitutionalists maintained a skeptical view of neoclassical models of perfect competition and money-maximizing behavior.⁸ They believed that the complexity of modern economic markets, the growing role of governmental regulation of the economy, and the growth of

other anticompetitive institutions, such as bureaucratic corporations and unions, all served to undercut whatever basis previously existed for the application of neoclassical models. Dunlop, as noted earlier, suggested that the large firm and the union produced internal markets that operated almost independently of the external market. For Fisher (1953), the competitive model was an anomaly rather than the norm, and was illustrated by such special situations as the harvest labor market in California. Kerr's well-known articles (1950, 1954a) put forward a view of labor markets as "segmented" or, in his words, "Balkanized," and he doubted whether wages are mainly determined by competitive market forces or whether wages exert much allocative effect on the numbers and locations of workers. Lester disputed the methodology of neoclassical models and denied their predictive validity in assessing the employment effects of minimum wage laws (1946, 1947). These ideas and criticisms of neoclassical theory are similarly expressed in the D-R literature today.

The neoinstitutionalists also emphasized sociological and psychological aspects of the employment relationship, but they did not talk of any "pathology" in the lower strata of the work force. Indeed, their research did not deal directly with the problems of poverty and discrimination. As close students of unions, they were less outside of the established institutions of power in the labor market than are the D-R economists.

D. Reverberations of the "Keynesian Revolution"

The D-R criticisms of orthodox theory and applications mainly deal with microeconomics, which is one reason why the Keynesian challenge to orthodox theory has not had a major influence on the newer challenge. Another reason is simply that Keynesianism has been incorporated into the new orthodoxy of macroeconomics. Nevertheless, a number of Keynesian ideas were influential on the neoinstitutionalists, and they continue to be found in the D-R literature.

One recurring theme is a systemic macro-instability and a tendency for the U.S. economy to operate with relatively high levels of unemployment. Contributing to macro-instability are wage and price rigidities, which have been stressed by the D-R economists and neoinstitutionalists as reasons for rejecting neoclassical models of the labor market. A related Keynesian hypothesis is that "money illusion," particularly on the part of workers, contributes to the frictions that destabilize employment levels. "Money illusion" may also be adduced as another argument against the assumption of rational economic behavior.

E. The Structuralist Debate of the 1960s and 1970s

High levels of unemployment and sluggish economic growth during 1957-1965 persuaded a group of economists, mainly labor economists who were called "structuralists," to dispute the contention of macroeconomic orthodoxy that aggregative monetary and fiscal policies could restore full employment without unacceptable levels of inflation. (See

Killingsworth, 1963 and Myrdal, 1963.) The dissident structuralists claimed that the problems of poverty and unemployment were attributable to structural shocks and imbalances. Unemployment in depressed areas and decaying inner cities, and unemployment due to technological change were held to be beyond the recuperative powers of aggregative policies.

Indeed, a general skepticism was expressed as to the adaptability and flexibility of a "free-market" competitive economy to adjust to various shocks to the system--even including such gradual shocks as changes in the demographic composition of the labor force.

An extreme structuralist position was taken by the "Triple Revolution" school in the late 1950s. This group predicted that automation would proceed at a pace that threatened to create mass unemployment and disrupt the social structure. A Presidential Commission (1965) prepared a persuasive case against the Triple R scare, and the automation specter has all but disappeared from current economic discussions.

The structuralist position appeared to be discredited when the prosperity of 1966-1970 occurred in the wake of a tax cut and expansionary monetary policies. Perhaps it deserves to be resurrected, given the shambles of the current macroeconomic scene--recession levels of unemployment combined with two-digit inflation. But more to the point of this paper is the agreement of the structuralist and D-R positions on the inability of the free market plus Keynesian macro-policies to (1) produce stability and (2) reward fairly the "secondary" labor force.

IV. The Modern Neoclassical Response to
the Dual and Radical Challenge

A. Methodological and Theoretical Issues

A recurring and difficult question is whether value judgments intrude in neoclassical analysis of economic behavior and violate any claim of ethical neutrality of the analysis. The distinction between positive and normative economics is, in principle, as clear-cut as the difference between the questions of "What is?" and "What ought to be?" Nevertheless, this distinction can be blurred when the investigator selects to emphasize certain outcomes and to downplay others or decides to express reservations or demurrers about some findings but not others, or, more basically, when he makes his original selection of the questions to investigate.

How legitimate is the assumption that various preferences (or tastes), laws, and institutions are exogenous in the model? How legitimate is the assumption that they may be omitted from the model? The general answer is that legitimacy is conferred if (1) the variables under investigation--say, income and prices--are worth studying in their own right; and (2) the model's predictions apply to a context in which one can assume that the unmeasured "noneconomic" variables either do not change or they change without affecting the expected values of the variables that are under investigation; and (3) the cost of complicating the model by adding more variables exceeds the benefits of greater accuracy in the measured effects of the variables under investigation.

These issues are entirely empirical, and it is pointless to argue about them in the abstract. At the same time it should be noted that much labor-economic research examines the effects of institutions and laws.

A defense of the style of conventional economic empirical research is that it, like all statistical research, is largely limited by the range of historical variation in the values of the variables in the model. An investigator who extrapolates much beyond this range of variation places heavy burdens on the theory, and most economic models are not that robust. Thus, the criticism that empirical research in economics does not examine nonmarginal or even revolutionary changes is often inappropriate.

Two other criticisms of orthodox labor economics may also be disputed. One is that the theories are too narrowly confined to economic behavior. Surely this criticism is challenged by the attention to leisure consumption, education, health, discrimination, fertility, and crime--just a few of the varied topics that orthodox labor economists have examined.

A second criticism, mentioned earlier, is that orthodox economics presumes a "harmony of interests among all economic actors, whether employers or employees" (Gordon, 1972). This criticism would sound odd to those who accuse laissez-faire, neoclassical economics of following the "law of the jungle" and "dog-eat-dog competition." Less dramatically, the general condemnation by orthodox economics of monopolies speaks for their approval of the "conflict" of competition in the market place, even though this means "losses" as well as "profits" to the individual economic agents.

Is anything more meant by the term "harmony" than the willingness of the various competitors, including workers vis-à-vis employers, to refrain from "killing off" one's opponent or confiscating all the opponent's property? These questions illustrate a relativism: the old CIO unions of the 1930s accepted a harmonious relation with industry--relative to the IWW!

In examining employer-employee relations, two of the institutionalist economists previously mentioned, Kerr and Fisher (1957), defended the conflict that they viewed as part of classical economics. They contrasted this with the model of industrial-relations harmony stemming from several alternative and disparate social philosophies and social organizations: totalitarian regimes; the society of the Catholic Church (see Tannenbaum, 1951); the "scientific managers," associated with Taylorism; and an influential group of "plant sociologists" or "human relationists," associated with Elton Mayo, George Homans, and W. F. Whyte. An extended quotation is worth our close attention:

The chosen world of the plant sociologists [or human relationists] is peopled by non-rational workers who desire security under the leadership of skilled plant managers. The workers have a strong sense of group interests, welcome control, and feel loyalty toward their leaders. The society is a relatively static one. . . . The great triumphs of the liberal era--individualism, liberty, competition--are viewed as the great disasters which will result in social disorganization. The great apologists of liberalism--such as Ricardo--are reviled.

The liberal economists have an almost opposite view of heaven on earth. Man is a reasoning being and is primarily motivated by a desire to maximize

his individual welfare. Competitive markets are used to spur on managers to greater efficiency....This is the open society to which the Western World has been dedicated for a century and a half. It is a society of accommodated conflict rather than universal collaboration. It is the world of Adam Smith rather than that of Plato. (Kerr and Fisher, 1957, p. 305)

In matters of economic analysis, the orthodox economists have not yet engaged the D-R group in methodological debates in print, but I suspect that the arguments would recall the earlier debates with the neoinstitutionalists. (See Lester, 1946; Machlup, 1946; Stigler, 1947; Friedman, 1953; Lampman, 1956, and Rottenberg, 1956.) The recent text in labor economics by Albert Rees includes a discussion of neoclassical theory that anticipates the debate that might take place with representatives of the D-R school:

The generally accepted theory of the demand for labor has changed very little since the beginning of this century. It is an application of the marginal productivity theory. . . .

Although the theory has been severely attacked by institutional labor economists, it survives the attacks both because the critics have often misunderstood it and because they have conspicuously failed to develop a coherent alternative theory to put in its place.

Much of the misunderstanding of marginal productivity theory is summed up in the single unfortunate term "the marginal productivity theory of wages. . . ." A demand schedule is a functional relation between a price (in this case, a wage) and the quantity demanded. . . . wages and employment are [however] jointly determined by supply and demand. . . ." (Rees, 1973, p. 58.)

The absence of attention to the supply side of the labor market is strikingly evident in Gordon's discussion of neoclassical theories of wage determination. He speaks of the latter's emphasis on "a single parameter--marginal productivity" (1972, p. 28). Not only does this statement commit the same error that Rees pointed out among the institutionalists, but it commits another error by failing to recognize that the demand schedule is itself a function of several variables, among which wage rates is only one. Another is the price of the product, which is why, when we do restrict our focus to demand, we should speak of the value of the marginal product, rather than the marginal productivity schedule per se. Thus, a worker's productivity can increase and his wage can decrease during the same period if, for example, demand for the product fell, leading to price declines of the product. Note the error in the following quotation that stems from the failure to consider the product price and supply side of the market:

[an individual's] income can be increased
only if his productivity can be raised.
(Thurow, as quoted in Gordon, 1972, p. 29)

In summary, the orthodox view of earnings determination does include attention to short-run demand conditions--to what is happening to sales and labor demands in particular industries or areas and to the overall state of business conditions as measured by the unemployment rate. In the long run, however, these factors are "averaged out," and the productivity characteristics of workers, as measured by their skills, training, education, and experience, assume greater importance. Finally, there is nothing in the methodology

of orthodox economics that rules out an interaction between short-run demand and long-run productivity factors, nor the roles of "personality" characteristics, institutional discrimination, and protectionism in the determination of earnings. I suggest, however, that until the D-R theories are formulated more explicitly and precisely, the empirical rather than methodological challenges provide more useful topics for debate.

B. Empirical-Theoretical Issues: Implications for Research and Policy

1. Occupational Boundaries and Occupational Mobility

One of the first questions in evaluating the D-R position is the factual content--the "realism," if you will--of the "duality" or "segmentation" of the labor force. In Piore's words (1972):

The basic hypothesis of the dual labor market was that the labor market is divided into two essentially distinct sectors, termed the primary and secondary sectors (p. 2).

Piore goes on to list several good characteristics of jobs in the primary sector and several bad characteristics of jobs in the secondary sector. Of course, all this provides a taxonomy, not a hypothesis. Indeed, as a taxonomy there are some vital missing parts. No rule is provided to designate which jobs go into one or the other sector. No specific hypotheses are stated that use this particular taxonomy; therefore, we are left to interpret the meaning and purpose of the "duality" on our own.

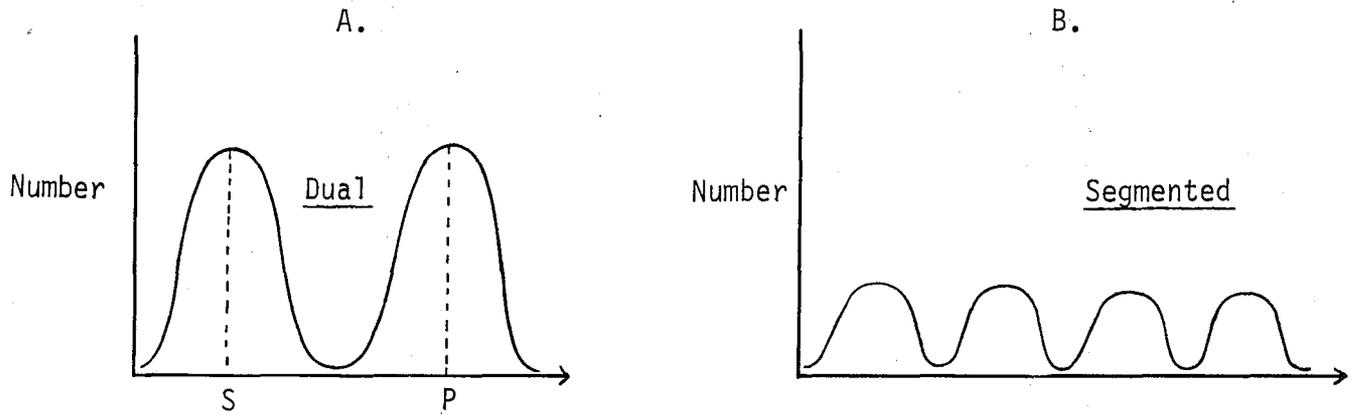
Two empirical questions about the occupational structure may be posed. The first is whether the static picture of the occupational

structure reveals a duality. Assume that we could agree upon a unidimensional scale to measure the quality (goodness or badness) of occupations. The measure might be some weighted average of financial returns, prestige, working conditions, and employment stability. Let this measure of job quality be measured on the horizontal axis, and the number of workers be measured on the vertical axis. (Perhaps the youngest and oldest workers would need to be excluded to eliminate this probable transitory source of variation in attained job quality. Also, the occupational status of blacks and women will be examined below when discrimination is discussed.)

The simplest test of the dual theory is whether the resulting frequency distribution is bimodal, as shown in Figure 1A. Correspondingly, the segmentation hypothesis would reveal a multimodal distribution as in Figure 1B. These dual hypotheses about the structure of occupations could be examined by descriptive cross-sectional "snapshots."

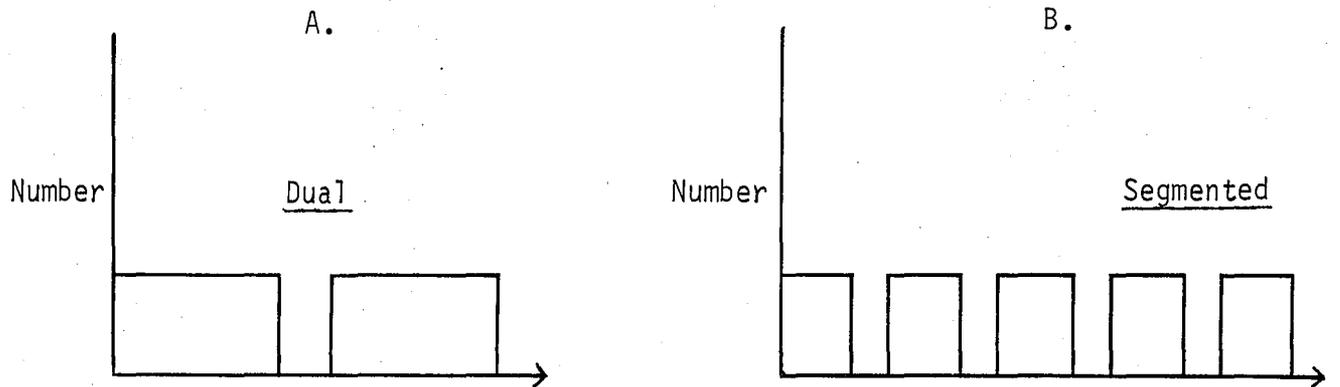
Another interpretation of the dual hypothesis is that the issue is not so much the existence of a bimodal distribution of secondary and primary occupational groupings, but rather the rigidity of the boundary between them. Nonmobility across occupational groups is conveyed in Figure 2A where the discrete separation between groups implies no interoccupational mobility. Figure 2B depicts several separate (unbridgeable) markets, but I will confine the discussion of tests of the hypothesis to the dual market. The question about mobility is to what extent workers, according to some pre-labor-market group characteristic, are confined to one segment of the occupational spectrum? Longitudinal data are the most useful for testing hypotheses about mobility.

FIGURE 1. POSSIBLE MODELS OF SHARPLY DISTINGUISHED DUAL OR SEGMENTED OCCUPATIONAL GROUPS

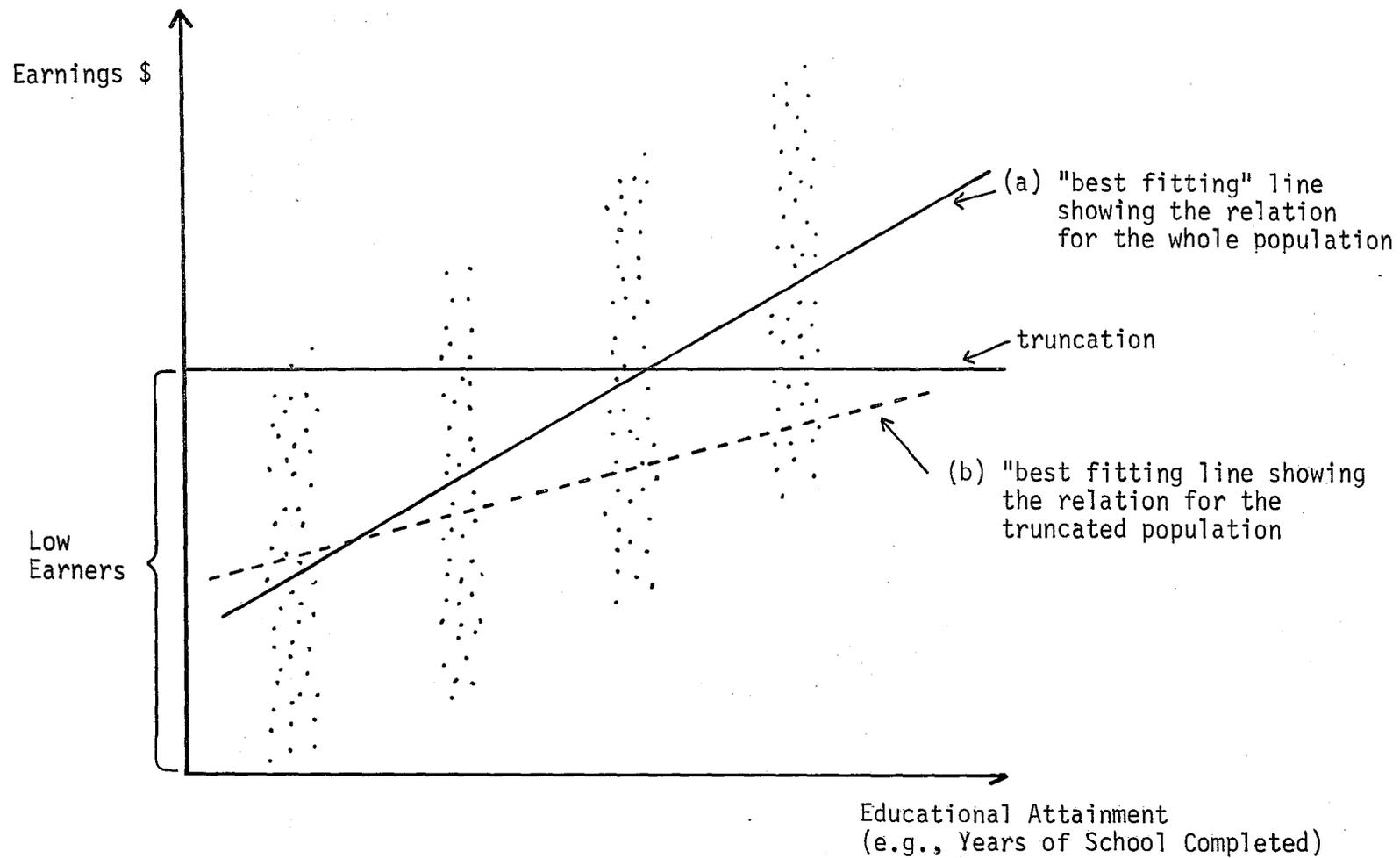


Occupations, Ranked by an Overall Measure of "Goodness" on the Horizontal Axis

FIGURE 2. POSSIBLE MODELS OF RIGID OCCUPATIONAL BOUNDARIES UNDER DUAL AND SEGMENTED HYPOTHESES



Occupations, Ranked by an Overall Measure of "Goodness" on the Horizontal Axis



44

FIGURE 3. HYPOTHETICAL SCATTER DIAGRAM AND REGRESSION OF EARNINGS ON EDUCATIONAL ATTAINMENT, WITH AND WITHOUT TRUNCATED EARNINGS

Clearly, both tests of the dual hypothesis require some criteria for determining in advance what assigns a worker to a primary or secondary sector and what degree of bimodality or immobility would be considered sufficient to justify the dual label. Surprisingly, almost no discussion of these criteria has been forthcoming. Osterman (1975) employs a test of duality in which he first classifies occupations according to his personal judgment about the autonomy and stability of occupations. Andresani (1973) simply selected the three-digit occupations and industries where median earnings are below the 33rd percentile of the labor force to define secondary workers. Various unfavorable characteristics for secondary jobs are, therefore, assured, but the boundary is arbitrary. The statistical analysis in both papers examined the effect of human capital variables on labor market outcomes (like wages), by regression techniques. However, the regression results, which show minimal effects for the secondary occupations, are suspect because a separate regression fit for the lower strata will bias the regression coefficients toward zero. The problems involved in fitting a regression in which the dependent variable, here earnings, is "truncated," arise again in the section on education and training, and a more extended discussion will be made there. (See pp. 81-84.)

Additional problems in investigating the dual hypothesis, assuming agreement on criteria for accepting or rejecting the hypothesis, lie in determining the unidimensional measure of occupational quality and in deciding upon the appropriate set of observations. Should part-time workers and young people be excluded, for example? Allowing for some degree of arbitrariness and experimentation in resolving these issues,

the empirical studies to test at least the descriptive accuracy of the D-R contentions would seem to be feasible.⁹

My own conjecture is that the occupational distribution would resemble the distribution of wage and salary incomes, which, in turn, is similar in shape to the approximately log-normal distribution of income.¹⁰ It is more difficult to express quantitatively the degree of mobility that one would expect under a test of the hypothesis about occupational boundaries.

2. Discrimination

Discrimination may be defined to exist when workers who are on average equally able (equally productive) receive different average remuneration. The remuneration may take the form of different compensation for the same work. More likely, however, discrimination will be revealed by different jobs being awarded to otherwise equally able workers--jobs that in turn will carry different pay and other benefits.

Incidentally, once it is recognized that discrimination may be effected by unfavorable job assignments, the analytical distinction between the "wage discrimination" of Becker (1971) and Arrow (1972, 1973b) and the "job discrimination" of Bergmann (1970, 1971) and Marshall (1974) disappears. For purposes of descriptive realism, however, I would agree that the Bergmann concept of "occupational segregation" and "crowding" and Marshall's "job discrimination" are superior. As Ashenfelter (1970) pointed out, we no longer see jobs advertised offering lower pay to blacks for the identical job, and, advertising aside, we will seldom see such blatant forms of discrimination.

Given the definition of discrimination as unequal pay for equal abilities, both orthodox and nonorthodox theories must explain why this inequitable pattern arises and why it persists. For the neo-classical economist, the persistence of discrimination constitutes the major challenge.

Neoclassical approaches. To review briefly the neoclassical explanation for the existence of discrimination, we may distinguish between "competitive" theories and "noncompetitive" theories. Under the former, discrimination reflects "tastes" against a definable group (Becker, 1971, and Arrow 1973b). Employers manifest their tastes for discrimination by paying whites more and blacks less. However, the competitive model predicts that employers who do not have such tastes (or have them to a lesser degree) could profit (with no sacrifice in psychic utility) by hiring the cheaper labor. Eventually, the low-cost employers will drive the high-cost employers out of business, unless the latter cease their discriminatory practices.

If the tastes for discrimination are manifest by employees, the implication is that the workers will prefer to work in segregated work sites and/or demand a wage premium to work in an integrated site. Clearly, if the employers have no tastes for discrimination they will respond by hiring a homogeneous color group. Competition will force equal pay for equal work, and the final result is segregation but no discriminatory wage difference.

If the tastes for discrimination are manifest by customers--the final economic agent in the market--discriminatory wage differentials should not occur in jobs that have no direct customer contact. In

summary, the neoclassical model of discrimination is not consistent with persistent pay differentials, if competition is assumed.

Now let us turn to noncompetitive models. It is important to note that the empirical and theoretical research of the orthodox economists has not given much credence or support to noncompetitive models. For example, Alchian and Kessel [1963] suggest that monopoly in the product market would only rationalize discrimination under certain conditions; (a) if the monopolists were willing to forgo money profits to indulge their tastes for discrimination; (b) if the barriers to entry were to prevent "buying out" the monopolist, since there would be extra money profits if a nondiscriminator would take over the business; (c) if the monopoly were regulated, wherein money profits were controlled by the regulator, which leads the monopolist to indulge his tastes for nonpecuniary benefits at a zero cost in forgone profits. Generally, neoclassical economists tend to minimize the extent of monopoly, so these points by Alchian and Kessel tended to reinforce their rejection of a monopoly explanation for discrimination.

In an important paper, Ashenfelter (1972) provided empirical evidence for a union effect on wages that, on average, improved the black/white earnings ratio. Thus, not only could monopoly on the labor supply side not explain discrimination, unionism made the overall measure of discrimination (i.e., the white-minus-black wage difference for comparable workers) even more difficult to explain within a neoclassical framework.

Finally, the neoclassical theorists have considered a monopoly in the labor market by the buyer of labor--that is, a monopsonistic employer.

Monopsony models do predict that the wage will be less than under competitive conditions; and if black workers were confined to monopsonistic labor markets, they would, indeed, be "exploited" in the classic definition of that term. Neoclassical economists have tended to dismiss monopsony, because they doubted that this situation could persist in the face of worker mobility "out of," or the entry by firms "into," the monopsony labor market. One exception sometimes cited are nurses, who may face a collusive group of employers (hospitals) and who may be relatively immobile, especially if they are tied to an area because of family responsibilities. (See Altman, 1973.)

A third class of models advanced by neoclassical economists, in addition to the "tastes" model and the noncompetitive models, has been called "statistical theories" of discrimination. (McCall, 1971; Phelps, 1972; Arrow, 1972 and 1973b.) Briefly, these models assume that employers hire, place, and pay workers on the basis of imperfect information about their true productivity. Given that less reliable information is available for blacks, the costs of this uncertainty (or, alternatively, the costs of reducing the uncertainty by providing additional information) is shifted from employers to the affected group of workers. In another version of this model, if the job assignment requires a certain high "score" on the productivity indicators, any group for whom the "test instrument" is unreliable will be at a disadvantage for the job. Aigner and Cain (1974) examine this class of models in some detail. Our conclusion is that, while these models are logical and suggestive of some plausible circumstances, they do not seem capable of explaining a very large measure of the existing discrimination.

D-R approaches. Given the difficulties that the neoclassical economists have had in rationalizing discrimination, we may look with interest at the D-R explanation for this problem. Three hypotheses have appeared, seldom all together, and seldom contained in an explicit model. The simplest of these hypotheses is the monopsony model. Thurow advanced it (1969) as a counter position to Becker's theory in which employers paid for discriminating. Thurow used South Africa as a counter-example. As an example of the confinement and immobility of the discriminated group and as an example of a government-supported collusive arrangement to subjugate the discriminated group, South Africa is perfect. However, the United States does not have a policy of apartheid, and the example of South Africa does not seem immediately relevant.

The second hypothesis appearing in the D-R literature is that a "divide-and-conquer" strategy by employers may make otherwise costly discrimination practices a net benefit. (See Franklin and Resnick, 1974; Silver, 1970.) Interestingly, the older institutionalist economists, who studied closely the rise of unionism, were aware of this motive and cited cases in which employers apparently were willing to encourage strife and dissension in their work forces, by a policy of playing one ethnic group off against another, solely to stave off unionism. (See Gulick, 1924.) However, the general entrenchment and conservatism of unions in the economy today cast doubt on the cost-effectiveness of this policy. The issue, let us keep in mind, is not whether employers want to keep the workers--perhaps, especially the black workers--"in their places," but whether the economy is organized in such a way that they can do so without paying for it.

The third hypothesis, associated with Piore (1970), is a version of the "self-perpetuating syndrome," in which an initial unfavorable placement of discriminated groups into the secondary sector causes them to develop "poor working habits." Given this endogenous formation of traits that are unfavorable to employers, the inferior labor force status of blacks becomes self-perpetuating. Two neoclassical economists have recognized this syndrome (Arrow, 1973b, and Phelps, 1972). However, there is yet no evidence for the pattern of causality implicit in the model, and, as it is stated, neither employer nor worker seems to benefit from this pattern--so it is not easy to accept at face value.¹¹

Apparently then, neither neoclassical nor D-R economists have developed fully persuasive theories of discrimination. A large number of hypotheses have been mentioned and, indeed, there are still others. One additional hypothesis that deserves attention because it relates to the much-discussed plight of the central city, is the role of residential segregation as a cause of labor market discrimination against blacks. As developed by Kain (see 1973 for a recent statement and citations), the black labor force tends to be geographically separated from the locations of white employers, and this introduces a cost in the employer-employee transaction. The cost is likely to be imposed on the black minority group. This hypothesis introduces the housing market and the issue of firm location into the discussion, and pursuing its theoretical structure and empirical implications would lead us too far afield. One of the problems this hypothesis must contend with is resolving the mutual causation involved in the employment-discrimination/geographic-residence relation. To what extent does employment

discrimination "cause" residential segregation, rather than the other way around?

Pre-labor-market discrimination, with special reference to sex discrimination. The race and sex differences in labor-market rewards, monetary and nonmonetary, are so large that it is not surprising that economists have been dissatisfied with the explanatory power of the various theories of labor market discrimination discussed above. Nor is it surprising that the D-R economists tend to focus on labor-market discrimination, while the orthodox economists have been more willing to look to pre-market conditions--in fact, to pre-labor-market discrimination--as the explanation for the differences in achievements. If, according to neoclassical theory, workers of equal productivity should receive equal wages and do not, then it is natural to expect the defenders of the theory to question whether productivity was really equal. Discrimination as customarily measured is the difference in pay after "controlling for productivity factors," and it is fair game to ask whether the factors are either complete or accurately measured.

The orthodox economist has developed two lines of theoretical argument (and many examples of empirical application) to explore pre-labor-market discrimination. One is to stress the importance of human capital (productivity enhancing) investments at the pre-labor-market stage. Various reasons, including pre-market discrimination, are available to explain the lesser schooling, lesser training, poorer health, and so on, of blacks. Much effort has been expended to measure

these shortfalls in investments, but the neoclassical economists are divided in their conclusions and interpretations of these efforts.

(On the quality of schooling, see Gwartney, 1970; O'Neill, 1970; Weiss, 1970; Ashenfelter and Taussig, 1971; and Welch, 1973.)

A second argument of the orthodox economists has been devoted exclusively (to my knowledge) to sex discrimination. In a sense, this argument may be said to deal with discrimination that begins even before the pre-labor-market discrimination just discussed. It is that women are vocationally discriminated against in the childhood formation of preferences or attitudes regarding their role in life--playing doctor or playing nurse--and in various child development activities.¹²

Note that the theory of "role discrimination" (to use Boulding's term [1974]) is consistent with neoclassical economics in two theoretical points. First, the theories of "comparative advantage" and "gains from specialization" suggest a division of labor in the household as between market-work and home-work. Historically, the child-bearing role has placed the comparative advantage in home-work with women. This division has, of course, been partially eroded by the declining family size, home-sector technological changes, lighter market-work, and a decreased amount of time devoted to market work on the part of males.

Second, the theory of human capital investment predicts that the amount of market-oriented investment will be less for those who expect to commit less time to the labor market.¹³ Given a finite life and customary retirement age, the pre-labor market investments will not pay

as much to workers who do not expect to work on a full-time year-in-year-out basis. These implicit constraints on human capital investments by many women may provide a partial explanation for why females have lagged, relative to men, in attaining post-high school education and in penetrating the "highest" (most human capital intensive) occupations in recent years, despite their general upward trend in labor force participation.

Of course, it can be argued that market discrimination is causal to the formation of preferences, and I would agree that some mutual causation is involved. However, the commitment to the home sector probably has a considerable voluntary aspect to it, especially historically. By the same argument, the slower growth in educational attainment of women relative to men, both in median years of schooling and in higher degrees, may reflect, in part, a response to discrimination against women in the higher occupations and, in part, a consequence of women's voluntary decision to make a lesser commitment to the market sector than men.

The mutual causation problem arises again in the orthodox claim that the lesser work experience of women is a key reason for their lower earnings, holding constant education (see Mincer and Polachek, 1974, and Economic Report of the President, 1973, especially pp. 104-107). Because wage rates are an important determinant of the time spent in the labor force, work experience is not an entirely satisfactory variable to explain away the sex differential in wages--causation runs both ways.¹⁴ This question of mutual causality is critical to an interpretation of the empirical evidence mentioned next.

In the aggregate, the time-series evidence for sex discrimination rests mainly in the failure of the occupational and full-year earnings gap between men and women workers to narrow. (See Zellner, 1971, and Weisskoff [now Blau], 1971.) Fuchs (1974), however, reports a modest increase in the wage rate of women relative to men from 1960 to 1970, which suggests that the earnings of full-year, year-around workers may not standardize for hours worked. Fuchs offers two reasons, cogent but not entirely persuasive, why the mere holding even of women's wages relative to men's is evidence for an increase in the relative demand for female labor. First, he implicitly assumes that the increase in the labor supply of women was largely autonomous. Even accepting this assumption, however, a rightward shift of the supply curve would not lower wages only for females, rather than for all labor, unless there is occupational segregation, which presumes discrimination. Second, the increase in work rates by women is viewed as an increase in less experienced and less able women, relative to the existing stock. But this is not obvious. If the increase in work rates stems from reduced exit rates, the average experience of the stock of working women may have increased over the decade, relative to men. Moreover, the selectivity of more productive women in the labor force is plausible on a priori grounds in a cross-section. But in a time-series, we need to examine empirically whether the successive cohorts are becoming more or less productive relative to men.

The analyses of cross-sectional data have turned up another challenge to the neoclassical rationalizations for the average sex differential in wages; namely, the evidence of a large discrimination

differential among individual men and women, despite the most careful and diligent attempts to control for education, training, and experience. (See N. Gordon, Morton, and Braden, 1974; Malkiel and Malkiel, 1973; and Oaxaca, 1973). Consider the careful study by Malkiel and Malkiel of the salary structure in a single, private firm of a relatively homogeneous group of men and women in technical and professional jobs. After controlling for several dimensions of the quantity and quality of both schooling and experience, as these variables pertain to the job, women were found to earn about 20 percent less than men. Indeed, this difference is about the same as that measured by Mincer and Polachek (1974), who, however, interpret their results as an "upper bound" on the discrimination differential. The wage gap measured by Oaxaca (1973) was 54 percent, although his controls for work experience--number of children born--were not as explicit as those in the previous two studies. These findings of wage gaps for "comparable" women are noteworthy if one believes, as I do, that information about a worker's productivity is not so costly as to justify a large risk premium for any uncertainty of female productivity, if competition prevails.

We can conclude this long section on discrimination theories by pointing to two controversies that, among economists, are rather conspicuously absent. To my knowledge neither D-R nor neoclassical economists argue that black preferences or tastes for market work (or for leisure) are causal variables capable of rationalizing the black's poorer status in the labor market. These attitudinal variables are, however, often considered effects of discrimination. Second, no

group in economics appears to have considered innate inferiority as an explanation for the differential economic success of various groups (particularly blacks).

3. Unemployment and Job Instability

No characteristic of the secondary labor market has been so singled out by D-R spokesmen as job instability. As a corollary, the job attribute that, in Piore's words, "above all" distinguishes the primary sector is "employment stability" (Piore, 1972, p. 2). We have noted previously that the term "pathological" was used to describe the job instability of the working poor, particularly the black working poor.

It is important to note, however, that the D-R economists distinguish between instability and unemployment. The former is attributed to the lack of good jobs and, to some extent, to unfavorable behavioral traits of the workers. Unemployment, on the other hand, is attributed to insufficient aggregate demand and manifested by a shortage of job offers relative to job applicants. Doeringer and Piore (1971, chapter 8) claim that it is not the lack of jobs but the lack of "good" jobs that is the root cause of the secondary labor market.

This distinction between instability and unemployment--between a lack of good jobs and a lack of jobs--may strike some readers as a bit fuzzy. Indeed, it should, since there is no important distinction to be made. A laid-off auto worker who is white and thirty-five years old has more jobs available to him than an unemployed black who is

twenty-five years old. But both are unemployed because the jobs that are known and available to them are not acceptable, for a variety of reasons that appear sound to them (and probably to us, if we knew all the circumstances). Nevertheless, the pool of jobs that may be accepted is probably larger for the black, partly because his reservation wage is lower--as he has less resources for sustenance while unemployed--and partly because the low wage employers will "know" that the black will be less "choosy" than the ex-auto worker. But the fundamental similarity of the unemployment situation of both types of worker remains: The jobs available at the time are not good enough.

I suggest, therefore, that defining the problem as one in which disadvantaged workers cannot get "good-enough" jobs to command their acceptance or attachment is merely a restatement of the substantive meaning of the census definition of "unemployment"--or, to use an old-fashioned term, "involuntary unemployment." The reason is apparent when we recognize that there are always many jobs available--but they are available, either explicitly (as listed vacancies) or implicitly (as potential vacancies), at terms that the worker deems unacceptably low.

Let us agree with the D-R proposition that employment instability is an undesirable characteristic of certain jobs and an unfortunate characteristic of certain workers, particularly low-wage workers. At this point we should pause to acknowledge that some primary (that is, "good") jobs, such as in the building trades, self-employment, and sales

work, are also unstable regarding either employment or earnings. Moreover, some unstable jobs are desired by and suitable for workers who want part-time or part-year work, such as some among the young, the semi-retired, and wives. These workers and their jobs may be part of the secondary sector, but to the extent that the casual attachment to the labor force is truly voluntary, the social problem associated with the secondary sector is entirely different from the case of workers, young or old, male or female, who are confined involuntarily to the secondary sector.

Aside from these qualifications about the problem of unstable jobs and workers, why should instability be analyzed differently from other unfavorable traits of jobs and workers, such as low pay, poor working conditions, and limited fringe benefits? More pointedly, if human capital models are able to provide explanations for the receipt of low wages, why should they not apply to fringe benefits and employment instability--other components of the total package of job remuneration? Employers in general offer jobs that vary widely in wage rates, and we do not hesitate to view fringe benefits as a potential substitute for wages. Employment stability can be similarly viewed as another component of the employer's offer, and perhaps we should expect as much variability in employment stability as there is in wage rates or fringe benefits. Human capital models predict and explain that highly skilled workers tend to receive higher wages and more fringe benefits than low-skilled workers. Perhaps we should expect to see variation in employment stability as an additional source of differential rewards to human capital (or skill).

The purpose of these somewhat rhetorical questions is not to dismiss the attention given to unemployment and job instability among D-R economists. Indeed, we discuss below a large body of research by orthodox labor economists devoted to these topics. Rather, the purpose is to question whether a prima facie case for the "failure" of neoclassical economic models can rest on the mere fact of job instability among a significant portion of low-skilled workers and low-paying jobs.

There is a good deal of debate among orthodox economists about why unemployment differs among groups of workers and jobs, and recognition that unemployment variability is more important than variability in fringe benefits or working conditions. Unemployment (or job instability) is tied closely to macroeconomic policies, and it impinges on workers in an uneven--and often harsh--way. So it is natural and appropriate that much more of our attention is devoted to these issues. The question that will be discussed below is whether the orthodox theories and techniques of analysis need to be abandoned in examining unemployment and job instability.

A final critical comment about the D-R perspective on unemployment and job instability is that, in their focus on the demand (or job) side of the labor market, they tend to oversimplify the issue by claiming that the instability is inherent in the jobs (Bluestone, 1970; Barrett and Morganstern, 1974).¹⁵ These jobs are said to impose short-run hardships on the workers who occupy them and, moreover, to create long-run problems because the workers fail to receive

on-the-job training, seniority, or stable working habits. This is certainly part of the story. But how do we know that the instability is a characteristic of the jobs and not of the workers who occupy the jobs? Certain types of jobs that are, for example, disproportionately filled by young people may well be described as relatively unstable, but this may reflect the looser labor force attachment of young people. On the other hand, the instability in certain jobs that have relatively large numbers of adult black males is likely to be due largely to the jobs rather than to the workers, who are firmly committed to the labor force.

Part of the explanation for the instability observed in both cases is that the workers have less human capital. They have lower opportunity costs of unemployment, and, in the absence of downward wage flexibility such workers are less attractive to employers. It must be said, however, that it is incumbent upon the orthodox theorists to determine to what extent the low levels of human capital are causal to the observed instability and to what extent the low levels of human capital are an effect of the instability.

These questions pose the classic identification problem that confronts so much of empirical economic analysis. There is undoubtedly a role played by both demand (jobs) and supply (workers) sides of the market. My criticism is not directed against the D-R claim that some degree of instability and turnover is caused by the nature of employer demand and the jobs offered. Rather, it is against the D-R inattention to the supply side--to the human capital and preference

traits of workers. Nor is it correct that the orthodox models ignore the demand side of the market, as will be pointed out next in the discussion of neoclassical theories of unemployment.

Neoclassical theories of unemployment and their relation to D-R theories. Some groups in the labor force experience unemployment that occurs in relatively numerous spells of short duration, and others, unemployment that tends to be of a single long duration. This issue is primarily important as a source of understanding why the level of unemployment is relatively high for various groups. Let us examine the duration of unemployment (or, alternatively, the number of spells of unemployment) as it has been recently analyzed in neoclassical terms by means of three related hypotheses--two of which overlap with D-R hypotheses.

a. Alternative sources of income. In the general neoclassical model of the allocation of one's time to various activities, the notion of budget constraints (income effects) and opportunity cost (price effects) have been fundamental. Consideration of the first factor suggests that those whose wealth status is low cannot afford long--or many--spells of unemployment. On the other hand, if there are alternative sources of support during unemployment--sources that yield income amounting to a relatively large fraction of one's expected earnings from employment--then these sources, by lowering the cost of unemployment, will encourage longer--or more--spells of unemployment.

Thus, young people and other so-called "secondary workers" in families with a "primary" earner often can rely on other members of

the family for support. Unemployment insurance (UI) and public assistance or "welfare" have received a good deal of comment in this connection by both conventional economists (Feldstein, 1972) and D-R economists (Piore, 1972; Gordon, 1972, p. 10). Indeed, politically conservative, conventional economists frequently suggest that our recent higher levels of unemployment are partly caused by the increased generosity of UI and welfare payments and by the liberalization of eligibility standards for these programs. Moreover, the income from these sources is generally conditional upon being without work, so work is, in a sense, "taxed" by these programs. Of course, welfare is more important as a potential determinant of being out of the labor force, rather than being unemployed.

The D-R spokesmen have also emphasized "illegitimate" sources of income, which, along with welfare assistance, are claimed to be a particularly relevant alternative to "regular" employment earnings in central city ghetto areas (Gordon, 1972, p. 10; Harrison, 1972, chapter 5; Bluestone, 1970; and Piore, 1970). Indirect support for the qualitative effect suggested here is found in the "new" neoclassical models of crime, which emphasize alternative earnings as an influence (Becker, 1968). Once again, we confront the puzzle of simultaneity: Does "a life of crime" cause unemployment and low earnings or do unemployment and low earnings cause crime?

While all of these above factors appear to be plausible qualitative explanations for differential unemployment rates and patterns among groups under other-things-equal conditions, their quantitative measurement is lacking. As with the more general problem of work

disincentives with respect to income maintenance laws, we simply have very little quantitative evidence on which to base policy decisions. (See Cain and Watts, 1973.)

b. Labor as a quasi-fixed factor of production. A simple but influential model of differential unemployment by skill class was advanced by Oi (1962) and Becker (1964) in the early stages of the surge in human capital analyses. The model assumes that (a) higher skill classes have more on-the-job, firm-specific training and/or that they are more complementary (relative to unskilled labor) to fixed, physical-capital factors of production (the latter point was developed extensively by Rosen, 1967); (b) there are "overhead costs" of recruiting, processing, placing, and of displacing or laying-off workers--costs that are often positively related to the wage levels of the skill groups; (c) the firm and workers are uncertain about the timing and duration of the downturns and upturns of the business cycle.

Under these assumptions, firms will tend to lay-off the lesser-skilled workers and to retain the higher-skilled workers. The latter are relatively more valuable when production declines because a larger fraction of capital is fixed and because the firm runs the risk of losing its investments in on-the-job training if the laid-off skilled workers were to take jobs elsewhere. Moreover, the costs of "processing" such employees may be higher as well.

Two further considerations are needed, however, to provide a more complete explanation of the higher unemployment rates for the lower-skill groups. One is that there must be some reason why the

wage rate of the lower-skill group does not fall to the point where they can compete on a cost-basis with the higher-skill group. There are several sources of such relatively rigid "floors"--union rates, bureaucratic inflexibility in large firms, minimum wage laws, "social minimum" reservation wages, and the alternative income support available from UI and welfare. Again, politically conservative orthodox economists have frequently blamed the institutional (especially governmental) wage fixing for causing unemployment, particularly by "marginal" workers (see Stigler, 1946; Feldstein, 1972; and Friedman, 1973).

A second reason why a lower-skill group may have higher unemployment and greater job instability links a neoclassical argument to the D-R hypothesis of internal labor markets in the primary sector. A neoclassical argument is as follows: In larger firms, particularly, fringe benefits and overhead costs have increased over time, partly because of union pressures, partly because of our tax laws, partly because of the preferences of workers and employers. These increases are both cause and effect of the large amount of on-the-job training (OJT) and firm-specific training in large organizations. The overhead costs of hiring and the emphasis on OJT make turnover expensive, and the fringe benefit package serves to reduce turnover. The result is stable employment tenure along with generous fringe benefits. Combined with elements of firm monopoly and unions, high wages are an added benefit of the remuneration package. All this is available to the "lucky" or "favored" workers who happen to get hired in these

"good jobs." If there is no favoritism, eventually the more productive workers are hired into this primary sector, although empirical investigators may find it difficult to measure all the productivity traits.¹⁶ Favoritism may mean discrimination by sex or color.

In summary, the prevalence of bureaucratic firms that emphasize OJT and the overhead costs of labor, combined with various wage floors, provide a neoclassical rationalization for a segment of high-paying, stable jobs.¹⁷ These types of jobs could be labeled "primary jobs," but whether the labor market is dualistic depends, obviously, on how common "protected labor markets" are and whether there is sufficient gradation in the pattern to yield a continuum rather than a dichotomy.

c. Job-search models. Given the historical importance of unemployment as a basis for criticizing neoclassical theories, it is worthwhile to present, if only briefly, one version of the "new" neoclassical models of job search and unemployment. (See Phelps, 1970.) As yet, they have not had much empirical application, although actually much of this "new" theory was anticipated by Melvin Reder earlier (1955, 1964) and developed extensively at a conceptual level by David and Holt (1966). The strong points of the recent work are theoretical rigor and the ability to provide a link between microeconomics and the prevailing macro theories of unemployment.

The link between micro- and macroeconomics may be illustrated briefly in a simple version of the new theories. Changes in aggregate demand are the basic macro source of changes in levels of employment

and prices. The job-search models center on the uncertainty generated by these macro changes, uncertainty that affects employers and employees differently. The employer knows the "real" price of his product in relation to his money labor costs, and he is quick to expand output when his product price is rising (as it would be during an inflation) and conversely during a deflation. The worker knows his money wage but not his precise real wage, because the latter's value depends on the entire price list of the worker's typical market basket of goods and services. Thus, the worker will be slower to adjust to inflation and deflation--offering "more" labor (for example, overtime) during the inflationary upswing (because the higher money wage appears as a higher real wage than it really is) and offering "less" labor (for example, unemployment) during a deflationary downswing (because the lower money wage appears as a lower real wage than it really is).

Given this setting, the job-search models are used to analyze and rationalize the behavior of unemployed workers. Actually, a good part of these models has already been introduced in the discussions of "alternative sources of income" and "labor as a quasi-fixed factor of production," but there are additional points.

The definition of unemployment implies that there is some active job search by the person without a job, and the job search models begins with the quasi-tautology that search continues as long as the marginal benefits of further search exceed the marginal costs. As we have already noted above, the costs are affected by one's alternative

income, including unemployment insurance, and one's wealth status. In fact, these factors mainly determine the opportunity costs of search, whereas the direct costs--such as employment agency fees and travel costs--are largely unmeasured but are, perhaps, small.

Unfortunately, little information is available about the benefits of job search. Casual observations suggests that the pay-off of job search to young people--and, indeed, the payoff for a trial-and-error system in job-taking--is higher than for older workers, who are more sure of their skill abilities and preferences. Similarly, employers usually know more about experienced or older workers, so there may be less variability in job offers. Certainly, young people generally have lower opportunity costs when they are unemployed. These considerations thereby predict and rationalize higher unemployment rates among young people. Similar arguments are made about women workers relative to male workers.

The foregoing are rather off-hand observations. Actually, the data requirements for empirical estimation of the formal job-search models are quite stringent. The model-builder must know something about the distribution as well as the mean of the potential remuneration available to the searching worker. Another crucial consideration in search behavior is whether job offers that are "sampled" must be chosen or rejected on a once-and-for-all basis, or whether two or more chances are available. Adding to the empirical difficulties of these models is the fact that the unobserved variable, "efficiency" of job search (which some analysts claim is positively related to educational

attainment), is probably correlated with the mean expected wage, and the latter is obviously correlated with the opportunity cost. Further unobservable variables include the **worker's** attitudes toward risk and his subjective discount rate. The latter variable, in fact, may be said to be the one new variable brought into job search models that was not already present in the older discussion of unemployment and the reasons for its duration. However, one may question the importance of discount rates given the short durations of most spells of unemployment.

The notion of the "efficiency" of the job search is central to an important assumption of the job-search models, namely, that efficiency of search is improved when the worker is unemployed and is able to "specialize" in search activity. As Tobin noted (1972), this crucial assumption has not been supported by any empirical evidence. In addressing this question, Matilla (1974, p. 238-9) reported that at least 50 to 60 percent of all workers who quit move from job to job without ever experiencing unemployment. "It is rational search strategy to line up a job in advance of quitting in order to avoid the costs of foregone income and to maximize bargaining power."

It is my view that the new job-search models of unemployment are not yet very useful. There are gaps in the theoretical structure, but the main shortcoming is their intractability to empirical work. Such work is needed to remove the ambiguities about signs of certain variables and to provide quantitative measures of the effects under study. Too many of the variables in the models are unobservable, and so many relationships are mutually causal that identification of the model would be difficult.

4. Wage rigidities and protected labor markets

When the neoclassical economists relax the assumptions of perfect competition and price (or wage) flexibility in their simple models, their analysis more nearly resembles the D-R models, although the rhetoric and policy conclusions differ. We have seen already how the admission of various market imperfections, such as monopolies, unions, governmental wage fixing, and governmental taxes and subsidies, in combination with uncertainty and ignorance, can reconcile certain D-R and orthodox hypotheses about discrimination, unemployment, and noncompeting groups.

Protected markets. Neoclassical models of developing economies often specify a dual labor market in which a noncompeting, protected sector occupies the urban, manufacturing-and-government sector of the economy. (A classic article is Lewis, 1954.) The unprotected or secondary sector consists of the rural areas and the nongovernment, nonmanufacturing portion of the urban economy. Harberger (1971) and Todaro (1969) have proposed neoclassical models in which the fixed high wages offered in the protected sector attract an excess of applicants over job openings. Unemployment serves as an equilibrating rationing mechanism.

The two wage levels are maintained indefinitely because the amount of unemployment in the protected sector permits an equality between expected earnings in the two sectors. Of course, the unemployment is not ordinarily shared equally among workers in the primary sector. The lucky workers are fully employed on the inside, while the unlucky ones on the outside experience 100 percent unemployment. In this case, the expected value of earnings in the primary sector is

equal to the wage in the secondary sector in equilibrium. The expected value is the wage times the probability of landing a job.

The models are used to explain unemployment in the urban sector and migration between the two sectors. Rural to urban migration is viewed as a function of the rural wage and expected urban wage. Unemployment is the equilibrating factor to restore equality between the two wages. A higher urban wage as a result of governmental or union imposition will increase migration and unemployment, other things equal. Orthodox economists have not sought to characterize the U.S. economy, or any developed nation's economy, in dual terms except for certain special cases--foreign immigration in western Europe, the migration of Mexican laborers to the southwestern U.S., and, as discussed later, the low-wage industries that are covered by the federal minimum wage law. D-R economists also have applied the model to migration behavior (Piore, 1973) and special cases, like ghetto areas (Tabb, 1970), but they differ sharply with the orthodox economists in characterizing the entire economy in dualistic terms.

Recently, Welch (1973) and Mincer (1974) applied the "protected market" model to explain labor-supply responses to minimum wage laws in the United States. Because rising minimum wages decrease the quantity of low-skilled workers demanded in the affected sector while increasing the payoff to the low-skilled workers who get those jobs, unemployment will increase to equilibrate the excess supply of job applicants. Whether labor-force withdrawals increase depends on the degree of certainty the applicant has about his prospects of getting

a job and his willingness to work in the uncovered sector. Mincer also considers the effects of income support programs like public assistance, which are hypothesized to increase queues and increase unemployment. He also examines the effect of turnover in the protected (covered) sector, which likewise is positively related to the number who queue, since the expected waiting time is less as turnover is increased. This essentially neoclassical model seems to capture several features of dual labor market models of migration, unemployment, and job instability.

There is nothing in theory that prevents one from analyzing many sectors of the labor market--industrial, occupational, regional--in terms of these protected-unprotected or, if you will, primary-secondary models. What here separates the orthodox and D-R economists is largely their differing empirical judgments about the extent and degree of protection that surround various groups in the market. Orthodox economists tend to deny as an empirical matter that the labor market is so rife with these protected enclaves that wide differences in rates of return by occupation, industry, and region persist. At least, the differences should not persist for groups of workers of equal endowments, unless nonpecuniary factors are responsible.

During the 1950s, after a period of rapid growth in the coverage and amount of fringe benefits, especially pension plans and other seniority-based benefits, apprehension about excessive immobility was voiced by conventional economic theorists, who feared that market efficiency would be impaired.¹⁸ Kerr (1954b), an institutionalist,

added the warning that even if there were economic benefits of the protected market and paternalistic employers, the individual freedoms fostered by a pluralistic society were endangered.

Characteristically, one of the early empirical tests of the hypothesis of an increasing immobility of the work force was carried out by an institutionalist, Arthur Ross. To the question he posed in the title of his article, "Do We Have a New Industrial Feudalism?," Ross's answer was "no." Later studies reveal a slight trend toward lesser mobility (Pencavel, 1970), but the empirical results were stated cautiously:

"...there does appear to be limited evidence supporting the thesis that growing wage supplements have contributed to the decline in the quit rate, but this is far from being a complete explanation, and changes in the industrial and demographic composition of the manufacturing work force are at least of equal importance" (Pencavel, 1970, p. 50).

The new pension reform law that was passed in 1974 will increase vesting privileges, which should facilitate mobility and, it is hoped, greater efficiency in the labor market.

Wage rigidities. While rigidities in wage rates due to governmental laws, unions, and customs are recognized by neoclassical economists, the D-R economists' view wage rigidity as a pervasive characterization of the economy. This belief is manifest in the D-R theories of "job competition" or "queue theories," which are intended to displace the orthodox theories of "wage competition" (Thurow, 1972). The D-R views revive those of the neoinstitutionalists, like Fisher (1953) and Kerr (1950), who looked upon the neoclassical model of the labor

market, with its assumptions of wage flexibility and atomistic competition, as the exception rather than the norm.

The dispute is difficult to debate for several reasons. We need to know, first, whether the issue is just downward wage rigidity or rigidity in both directions. Neoclassicists, at least since Keynes, have recognized the stickiness of wages in a downward direction, and this view provides a rationale for favoring a growth in the stock of money to finance the transactions of productivity increases without a decrease in the price level. As an illustration, if a significant increase in the labor supply is imminent, because of immigration or the entry of a large cohort of high school graduates, the modern neoclassical policy would call for expansionary monetary policies to facilitate their employment rather than requiring cuts in the money wages in the pool of job slots for which the new entrants are competing. (If the stock of capital had been growing at the same rate as the increase in the labor force, real wages need not fall.)

Second, debates about wage rigidity often flounder over the length of time that wages have to remain "fixed" in order to be considered "fixed" for the problem at hand. Certainly it is noncontroversial that particular wages are inflexible in the short run. The employment decisions by employers and workers are, therefore, determined by nonwage aspects of the labor "contract" during the short-run intervals between wage rate changes. These ideas have been around for some time (see Reder, 1964). However, it is probably fair to credit the empirical studies of the hiring and job-search processes by the

neoinstitutionalists (reviewed in Parnes, 1954) for forcing the orthodox labor economists to look more closely at wage rigidities and nonwage terms of the employment exchange.

Third, there is confusion about wage rigidity in the individual firm compared to wage rigidity in the market. The challenging hypothesis of the workings of the labor market posed by the job competition and queue theories concern market behavior. It is not surprising that a given firm will adopt a wage policy that fixes a single wage schedule for the grades of workers it hires. To do otherwise would be costly and unsettling. Given such a wage policy, certain descriptive statements about the employer's hiring behavior are obvious: The employer will hire the best prospective workers from the pool of applicants, reaching down to the poorer applicants only if the pool is small or if demand is high. However, note that effective wage flexibility is partially achieved by virtue of the employer's ability to upgrade or downgrade the job slots (and, thereby, the wages) of the applicants, depending on whether the labor market is tight or loose. But more important for the neoclassical position is the fact that the market as a whole offers possibilities for wage flexibility. Some firms are expanding, some contracting, and market diversity in wages for similar skills occurs because firms choose "high" and "low" wage policies, depending on how the firm's management decides to deal with turnover and the amount of supervision per employee. Mention of turnover (or job stability) and supervision raises again the dimension of nonwage aspects of the labor contract.

The question of the flexibility of wages has great importance for neoclassical theories of labor-market behavior. The absence of wage movements in the presence of demand or supply shifts implies nonmaximizing behavior by employers and workers, unless it can be shown that the costs of making the wage change are sufficiently large (for example, renegotiating a contract). Wage rigidities were invoked at several points in the discussions about noncompeting groups, discrimination (see for example the "truncation" test-selection model in the Aigner-Cain paper (1974) on statistical theories of discrimination), and unemployment. The implication for empirical research, if the maximization assumption is retained, is that much greater attention would need to be devoted to the nonwage aspects of the employment transaction. Empirical economic research would be more difficult in a world where prices are not included in the model.

5. The alleged failure of education and training programs and models

The last topic of empirical criticism directed at the neoclassical models of labor markets that I examine revives several D-Rich challenges already developed: the shortcomings of human capital models and the governmental programs presumably based on them; the persistence of poverty; the need for bolder programs of intervention on the demand side. Several of the allegations of the failure of education and training programs were suggested earlier in this paper; here the focus is on evaluating these criticisms.

The failure of programs. A distinction needs to be made between programs that were directly concerned with labor-market skills and educational programs, per se. The latter, particularly when administered

to young children, are fairly remote from labor market performance, although the pessimistic evaluations by Coleman, Jencks, and others has affected the view of all compensatory programs. Only a few remarks will be made about this type of program:

- a. The prevailing pessimistic view of the effectiveness of schooling inputs generally and of compensatory programs in particular is a reflection of the lack of credible, implementable theories of educational development.
- b. Some of the statistical evidence is marred by a preoccupation with the program's "contribution to explained variance" of the dependent variable (educational achievement), which is at best an irrelevant statistical criterion for policy purposes (see Cain and Watts, 1970).
- c. These pessimistic findings, as mentioned before, are mainly directed at the "intensive margin" of educational investment and not at more years of schooling completed (the "extensive margin"). The reality of the positive affect of years of schooling on earnings is convincingly demonstrated in Mincer (1974). At worst, the negative results regarding educational inputs cast a shadow of skepticism in our interpretation of the many studies showing favorable rates of return to years of schooling.

Turning to manpower training programs, I suggest that they do not deserve either the condemnation they now receive nor the credit they received a few years ago. The initial successes that were reported for

the manpower training programs during 1964-1966 (see Somers, 1968) were probably overstated. With hindsight, we suspect that the evaluations did not fully cope with the problems of inadequate control groups and too short a post-training period to measure the earnings difference between the trainees and the control group. It is likely that "creaming" served to make the program look better than it really was. In addition, the placement (as distinct from the training) component tended to dominate the trainee-control comparison in the immediate aftermath of the program.

Conversely, the manpower programs after 1966, including the Job Corps and Neighborhood Youth Corps, tended to reach more disadvantaged groups--a response to increased militancy of the constituent groups and to the fact that a tight labor market absorbed the more able workers. Here, the opposite of creaming very likely characterized the selection process, and an expected consequence is a negative bias in the evaluation of these programs. Despite this likely bias, the evaluations produced mixed verdicts. Some were negative (O'Neill, 1973; Hamermesh, 1971), and some were positive (Hardin and Borus, 1971; Rawling, 1972; Mangum and Walsh, 1973). The D-R criticism of the governmentally sponsored training programs--a criticism joined by politically conservative economists (who tend to be orthodox)--appears unwarranted by the evidence, as would a positive verdict. A useful survey of evaluations of training programs, which reveals the difficulties in arriving at unambiguous verdicts of their cost effectiveness, is provided by Goldstein (1973).

Allegations of the predictive failure of human capital models, with special reference to secondary sector. The prominent place of formal

education in the human capital literature presents, in many ways, an inviting target of criticism. Two types of counter arguments to the claim that this "investment" yields high (or "competitive") rates of return have been inevitable and almost impossible to test satisfactorily: that the effect of education is biased up because (1) personal ability is not adequately controlled; (2) the "screening" or "certification" function of education allows a favored class to get the best job. The D-R emphasis is on (2): Thurow (1971) states: "The function of education is not to confer skill and therefore increased productivity and higher wages on the worker; it is rather to certify his 'trainability' and to confer upon him a certain status" (p. 68).

The screening hypothesis raises three questions: (1) Does the "screen" reveal true productivity differences? If not, then the employer who pays more for the more educated is not maximizing profits, and he must be exercising his tastes for discrimination. Discrimination has already been discussed and will not be pursued here. (2) If the screen has some value in revealing productivity differences, are they differences that reflect the education per se, or are they individual productivity differences that are independent of the education? Obviously the screening hypotheses, in pure form, says the latter. (3) If a pure screen hypothesis is not accepted, how much of the return to education is due to education, per se, and how much to the screen, per se? Presumably, the "screening hypothesis" generally claims that there is a substantial screening effect.

An analysis of the screening hypothesis by Layard and Psacharopoulos (1974) raised three objections to it. (An analysis by Chiswick, 1973, is similar.) First, they noted that a graduation certificate did not consistently show a positive rate of return over some lesser number of years of schooling completed, in six empirical studies of rates-of-return to education. This finding was strongest, however, when individual I.Q. was "held constant," and the screening advocates could argue that this type of ability is precisely what the screen detects. (However, see point three below.) Second, they note that the returns to education should fall with work experience, since the value of the screen would diminish as actual performance was revealed. This is not observed, but perhaps the screen serves to select workers for a particular career path that is tied to the initial job. Third, Layard and Psacharopoulos make the simple and common sense point that education would not be demanded because it is so blatantly more expensive than alternative testing and screening devices. Indeed, private agencies, like Educational Testing Service or other more vocationally oriented testing firms, are on the scene to wipe out the educational establishment if all the latter could do was provide screens. It seems unreasonable to think that reading, writing, and arithmetic skills--not to mention the educational content of engineering and medical schools--do not involve real productivity attributes. Admittedly, no supporting empirical evidence for these "common sense" points are offered.

Let us switch from the screening hypothesis to a series of other criticisms that the D-R economists have aimed at the orthodox view of

the role of education in the labor market. There is repeatedly the claim that education has a minimal effect on the labor market performance of disadvantaged groups--blacks, women, residents of the ghetto, and others in the "secondary labor market." This claim appears overstated.

a. Regarding blacks, the longstanding empirical generalization that schooling had a lower payoff for blacks appears to be no longer correct in the 1970s. Welch (1973), Freeman (1972), and Weiss and Williamson (1972) have recently found that education does have a significant payoff for blacks.

b. Regarding women, there is the ambiguity of defining home productivity and in defining her economic status separately from her household's economic status. It is difficult to say what the payoff of education is to women without knowing how education affects these aspects of her life. As noted earlier, a smaller market earnings effect of education for women is consistent with a lesser commitment to the market sector, relative to men (Mincer and Polachek, 1974).

c. Regarding ghetto residents, low-income workers, and "secondary workers" there is the danger that the D-R spokesmen are confused by a statistical artifact. Consider a "true" relation between educational attainment and earnings for the population as a whole as shown by line (a) in Figure 3 (p. 44). The population might be all persons, all black males, all white males, all persons born in the 1940s, or some other population defined by a fixed characteristic. We should not be surprised, I maintain, to see a wide dispersion about the line. There are, indeed, many factors that affect earnings.

Now consider the relation between education and earnings for a population that is restricted to low-wage workers, to the secondary labor force, or to residents in poverty neighborhoods. This sort of restricted population is very much like the truncated population shown in Figure 3. But when we truncate on the values of the dependent variable, we guarantee that the relation between education and earnings will be lessened--indeed, it is not surprising to see it approach zero.¹⁹ But clearly this is an after-the-fact descriptive relation that does not carry the policy implication that education does not pay for a population of interest--such as blacks and sons and daughters of poor families. Maybe it doesn't, but the evidence in the truncated part of the figure does not demonstrate it.²⁰

Several regression analyses by D-R economists appear to be "truncated" and, therefore, do not justify the conclusions drawn.²¹ For similar reasons we should be skeptical of Piore's finding about low wage Puerto Rican workers in the Boston area: "Agricultural background, inexperience in the Boston labor market, language, low education. . . . None seemed important to actual performance at work" (1973, pp. 17-19). Also brought into question is the interpretation that schooling "doesn't count" for "low achievers"--a conclusion reached by Hansen, Weisbrod, and Scanlon (1970) based on a regression of earnings of "low achievers" (draft rejectees), on years of schooling, holding a few other variables constant. Here, "low achievers" is not necessarily the same as "low earners"--so the truncation of the regression is not strictly a truncation on the dependent variables, but my guess is that the two are close enough so that regression coefficients

that are biased toward zero are likely. Technical criticism of this article was made by Chiswick (1972) and by Masters and Ribich (1972).

The statistical biases in fitting truncated regressions may still permit unbiased comparisons between, say, black and white workers. The question would be whether one of the groups revealed the bias differentially, and the answer would undoubtedly vary, depending on the particular circumstances.

A related criticism of the D-R view of human capital empirical findings involves the claim that education is unimportant because the variable representing this characteristic explains little of the observed variation in earnings. This criterion of "explained variation" (or contribution to R^2) has no more relevance in this context than it did in the estimation of education production functions, as mentioned on p. 76. From the policy point of view, the amount of variance explained by a variable may have no relation to the quantitative magnitude of the effect of the variable. Yet it is precisely that effect of the variable, which, along with its costs, is relevant for purposes of manipulating the variable as deliberate policy. (See Cain and Watts, 1970, for an elaboration of this argument.)

V. Conclusions

It is difficult to summarize the contents of this long paper without being repetitive and adding unduly to the length. My brief summary judgment of the D-R challenge is that it does not begin to offer a theory of the labor market that can replace neoclassical theory,

despite our various degrees of dissatisfaction with the empirical corpus of that theory. The D-R's theoretical and methodological criticisms of the neoclassical theory are not substantial and are often misguided; nevertheless, a tradition of criticism of orthodox economics is sustained, and this is healthy. The main theoretical contributions, which amount to modifications and additions to orthodox theory, are (1) the ideas of the endogenous determination of attitudinal variables among workers, and (2) the institutional dimensions of internal labor markets--which enrich our understanding of the "economics of bureaucratic organization."

In the areas of empirical research and policy prescriptions, the D-R school represents an important voice that deserves to be heard. Although their research suffers, in my opinion, because it is not anchored to as tight and consistent a theory as neoclassical theory, this "vice" becomes a "virtue" regarding the objective of striking out in new directions.

Neoclassical research can become terribly inbred and out-of-touch with policymakers or practical users of economic predictions. This danger is particularly acute because the standards for empirical verification are so weak. Most research is, after all, not addressed to practical and useful prediction or policy assistance. The research that is so addressed is rarely tested in an actual application. Because criteria for assessing the validity of the research is lacking, the studies are vulnerable to misuse in the policy realm. One or another study will often be picked up only when a policymaker finds it expedient to do so. Thus, the favorable benefit-cost evaluations are cited when an

administration favors expanding the programs, and the unfavorable evaluations come into demand when a retrenchment occurs. Unless the evaluations are more convincingly definitive, this self-serving process is hard to check.

Neoclassical research has made progress in examining many empirical issues that have been the basis for the challenges of the D-R economists--unemployment, discrimination, the evaluation of social action programs, and the analysis of a variety of market imperfections--but progress in persuasive empirical estimation of the models developed is slow. With nonexperimental data we confront variables that "ought" to be in the model but are nonetheless omitted because they are unavailable. And, of course, the simultaneity of relationships among variables often blocks the statistical "identification" of the appropriate system of relationships. Of course, these problems face any empirical economist, neoclassical or D-R.

At the practical level of suggested areas of research and policy analysis that stem from the D-R challenge and neoclassical response, I would mention the following:

1. The nonwage dimension of employment. Fringe benefits have increased to the point where they are a large fraction of labor costs and employee compensation. The money wage has been the staple of orthodox empirical work concerning allocative choices, rates of return to investments, migration decisions, and so on. However, one may question whether the nonwage dimension of remuneration can be ignored. The works by Lucas (1972) and Thaler and Rosen (1974) on "hedonic" prices of job characteristics are promising exceptions.

2. Occupational promotion paths. The dual and segmented market hypotheses about barriers to mobility call for longitudinal studies of intrafirm and interfirm occupational mobility. The neoclassical analyses of career choice, post-schooling investments, returns, and depreciation, likewise will depend on work history data.

3. The role of psychological variables in the workers' performance in the labor market. This is an important topic, but whether the empirical research about it is going to be useful in the near future is another question. We need to know much more about the relationships between these variables and the conventional labor market variables of interest. Are the psychological or sociopsychological variables outcomes or inputs in the particular model under analysis? If they are both outcomes and inputs, what is the system of recursive or simultaneous equations that specify their relationships to other variables? Given a specification and given the sample statistics--that is, the means, variances, correlation coefficients, regression coefficients, among others--that are measured, what do we know about the stability of such statistics in other bodies of data? What is the population about which we are trying to make inferences, and how reliable are these measured statistics for making predictions about the population?

Next, we need to ask ourselves about the policy significance of these parameter estimates--assuming they have been found to be stable. Do they represent variables that can be manipulated to achieve desired outcomes? Are they a measure of an outcome by which we should judge the performance of some policy or program? If they are believed to be a policy instrument, how costly is it to use the instrument? Are the benefits derived worth the costs?

These questions are not meant to imply that the variables are not worth studying if they turn out to have little scope for manipulation by policy. For example, the educational psychologist may provide information about "innate ability" that is causally related to one's genetic structure, and although this variable may not be manipulable by acceptable means, it could still be valuable, even essential, as a "control variable" in models aimed at measuring the effect of a policy instrument, like training or education.

4. Benefit-cost analyses of governmental intervention. For all the seemingly intractable difficulties in evaluation research, this remains a potentially useful area of applied economic research. Useful, not the least, to the research economist who must thereby confront the question of the accuracy (or unbiasedness) of his empirical results--unbiased with respect to a well-defined, nonhypothetical market experiment. There is a need for analyses of the legal and regulatory modes of governmental intervention, as well as programs. Again, the demands for credible empirical estimates as distinct from credible "qualitative signs" (or test of hypotheses) should force the researcher to an uncommon standard of care in his analysis. The great debate in manpower programs over supply-side versus demand-side intervention is, for better or worse, an empirical question of, What works, to what extent, and at what cost?

A Final Word

The debate about strategies of governmental intervention in the labor market recalls the radical criticism of Wachtel, quoted in page 7 of this paper, that orthodox economics fails to go beyond the study and advocacy of programs to enhance individual

productivity. I believe this criticism is incorrect, and I offer a counter example that illustrates the variety of policies proposed by orthodox economists. In a famous paper entitled "Improving the Economic Status of the Negro," James Tobin (1965) proposed four types of programs: (1) income-maintenance extension and reform; specifically, a negative income tax; (2) "maintaining genuinely full employment"; (3) ending barriers to entry to favored jobs; (4) programs to increase individual's productivity by means of human capital investments. No school of economics has a proprietary claim on, nor ignores, anyone.

Footnotes

¹The quota system refers to a requirement, usually imposed by a government agency, that a specified fraction of an employer's hires and promotions be allocated to certain groups, such as blacks and women. The names mentioned refer to John K. Galbraith, Edwin Kuh, and Lester C. Thurow (1971).

²The term "pathological" was used by Hall (1971), who titled his research for the Labor Department, "Exploratory Empirical Research on the Pathology of Secondary Labor Markets" (Contract No. 91-05-70-37). The emphasis on turnover in secondary labor markets is, however, usually associated with the writings of Doeringer and Piore.

³"There are distinctions between workers in the two sectors which parallel those between jobs: workers in the secondary sector . . . exhibit greater turnover, higher rates of tardiness and absenteeism, more insubordination. . . ," Doeringer and Piore, 1971, p. 115.

⁴Given the caveats mentioned, the following noneconomist social scientists may be referred to for expressions of the "culture of poverty" thesis: anthropologist Oscar Lewis (1968), historian Daniel Moynihan (1967 and 1968), political scientist Edwin Banfield (1970), and sociologist Ben Seligman (1968). Among a large number of noneconomist social scientists who have been critical of this view, see Valentine, 1967; Gans, 1968; and Duncan, 1968.

⁵The "job competition" theory is related to and evolved from a "queue theory" that Thurow had earlier propounded (Thurow, 1968).

⁶For another statement of these policy recommendation, see Doeringer et al. (1972, pp. 38-40) and Doeringer (1969).

⁷Robert Evans, Jr. (1973) has questioned the influence of the neoinstitutionalists on the D-R economists and argues that the latter have developed oversimplified models and have not captured the richness of the neoinstitutionalist heritage. In other respects, Evan's paper agrees with much that is in this paper.

⁸It can perhaps be said that the neoclassical economists, who tended not to be labor economists, had a skeptical view of the analyses of the neoinstitutionalist labor economists. In 1950, a conference of general theorists, which included some of the most prominent economists in America, examined "the impact of the labor union," to use the title of the book that emerged from the conference (ed. by Wright, 1951). In his review of the book, Lloyd Reynolds recalled the saying: "War is too important to be left to generals;" and he wryly remarked

Footnote 8 continued

that the spirit of the conference seemed to indicate that "labor economics is too important to be left to labor economists" (Reynolds, 1953, p. 474).

⁹The dissertation of Marc Freiman, at the University of Wisconsin, is one attempt to carry out empirically the tests described. See also, Duane Leigh (1974).

¹⁰In a recent paper that came to my attention too late to incorporate fully, Wachter (1974) marshalls persuasive arguments and evidence against a "duality" in the labor market.

¹¹However, we should note that the radical economists might claim that employers will be net gainers from the "self-perpetuating syndrome," if, as the radicalists maintain, the profit losses to employers are offset by entrenchment of their (the employers') social, economic, political, and psychological status. See Marglin (1971).

¹²One reader of this sentence suggested that the expression "discriminated against" should be replaced by "treated differently from men," on grounds that the burdens and hazards of market work may make a home vocation preferable to a market vocation. Higher mortality rates of males testify to this judgment, the reader added. I agree that prevailing child-rearing practices discriminate against males with respect to many lifetime activities. However, housework appears to be ranked lower than market-work in contemporary society. As to men's high mortality rates, these may only reflect their natural weakness relative to women. See Montagu (1952) and Madigan (1957).

¹³A recent exposition of this hypothesis as it applies to women appears in Mincer and Polachek (1974). Their empirical evidence is discussed below.

¹⁴Mincer and Polachek, in their excellent study, examine the mutual-causation problem between "years of work experience" and "the wage rate" by estimating a simultaneous equation model in which both variables are endogenous. They report virtually the same-sized positive coefficient of the instrumental variable for experience as they found in the single equation model. I confess to reservations about this part of their paper. The instruments for "experience" were wife's schooling, husband's schooling, and the wife's number-of-children. However, wife's schooling is in the wage equation, and virtually all the remaining variation in experience was due to the number of children variable, which had a t-ratio of 12. The coefficient of husband's schooling was not significant at the 5 percent level (its t-ratio was 1.8). Thus, the instrument for experience in the second-stage, wage equation boils down to the number of children, which has every right to be labeled endogenous.

¹⁵"Instability on the job appears to be a more serious cause of ghetto unemployment than lack of skill" (Doeringer et al., 1972a, p. 4).

¹⁶These issues have in fact been investigated empirically. Weiss (1971) has provided an excellent review of the relation between "concentration" (as the industrial organization economists refer to the monopoly-oligopoly measure), unionism, and wage rates. He concludes that a gross correlation between wages and concentration exists, but that it is reduced in size and reduced to statistical insignificance when various "personal" characteristics of the workers are controlled for--controlling, presumably, for the "quality" or "productivity" of the worker. Thus, Weiss concludes that significant "monopoly rents" are not received by workers in the concentrated industries. However, he did find, as have others (see Lewis, 1964) a significant, positive union effect on wages.

¹⁷Many of the above ideas are discussed clearly in Rees, 1973, pp. 83-90. See also Wachter (1974) and Wachter and Williamson (1974) for another and more extended rationalization, on neoclassical terms, of "internal" (within-firm) labor markets.

¹⁸This apprehension was expressed at several points and in the conclusions (pp. 380-1) of the book, Impact of the Labor Union (Wright, 1951), which resulted from a conference of eight leading economic theorists.

¹⁹A technical development of these statistical points is given in Cain and Watts (1973).

²⁰In general, truncation on an exogenous or predetermined characteristic like skin color, age, or a genetic trait causes no problems of interpretation. Not so for an endogenous characteristic, either the dependent variable or a characteristic affected by the same variables that affect the dependent variable. The case of "ghetto residence" illustrates the issue. If residence is fixed (e.g., as for a Jewish ghetto centuries ago), then a "truncation" (or selection) on this characteristic is appropriate. However, residence is generally endogenous and affected by many of the same factors that affect income; therefore, it is not a suitable selection variable in models with income as a dependent variable.

²¹This type of truncated regression model is presented in Doeringer et al. (1972, pp. 6-7). As mentioned on p. 45 Andresani (1973) and Osterman (1975) also fit separate "human capital" regressions for primary and secondary workers, and they comment upon the smaller regression coefficients for the secondary group. Similarly, Bluestone (1971) reports on the poor explanatory power of individual human capital characteristics, like education and skill among the lower occupational strata, compared with the power of those human capital variables in regression models of the higher occupational strata. Figure 3 above provides an explanation for why the findings of Andresani, Bluestone, Doeringer et al., and Osterman may be artifactual.

Bibliography

*Refers to item cited in Aigner-Cain

- Aigner, D. S., and Cain, G. G. (1974). "A Statistical Theory of Discrimination in the Labor Market." Institute for Research on Poverty Discussion Paper 228-74. Madison, Wis.: University of Wisconsin, Institute for Research on Poverty.
- Alchian, A. A., and Kessel, R. A. (1962). "Competition, Monopoly, and the Pursuit of Pecuniary Gain," In Aspects of Labor Economics, A Conference of the Universities--National Bureau Committee, pp. 156-175. Princeton, New Jersey: Princeton Univ. Press.
- Altman, Stuart H. (1971). Present and Future Supply of Registered Nurses. Washington, D. C.: U. S. Government Printing Office.
- Andrisani, Paul J. (1973). "An Empirical Analysis of the Dual Labor Market Theory." Ph.D. dissertation, Ohio State University.
- Arrow, Kenneth (1972). "Models of Job Discrimination" and "Some Mathematical Models of Race in the Labor Market." In Racial Discrimination in Economic Life, edited by A. H. Pascal, pp. 83-102 and 187-204. Lexington, Massachusetts: Lexington Books, D. C. Heath and Co.
- _____ (1973). "The Theory of Discrimination." In Discrimination in Labor Markets, edited by O. Ashenfelter and A. Rees, pp. 3-33. Princeton, New Jersey: Princeton Univ. Press.
- _____ (1973a). "Higher Education As a Filter." Journal of Public Economics 2 (July): 193-216.
- Ashenfelter, Orley (1970). "Changes in Labor Market Discrimination Over Time." Journal of Human Resources (Fall): 403-430.
- _____ (1972). "Racial Discrimination and Trade Unionism." Journal of Political Economy 80 (May/June): 435-463.
- Ashenfelter, Orley, and Taussig, Michael K. (1971). "Discrimination and Income Differentials: Comment." American Economic Review 61 (September): 746-750.
- Banfield, Edward (1970). The Unheavenly City. Boston: Little, Brown and Co.
- Barrett, Nancy S., and Morganstem, Richard D. (1974). "Why Do Blacks and Women Have High Unemployment Rates?" Journal of Human Resources (Fall): 452-464.

- Becker, G. S. (1964). Human Capital. New York: National Bureau of Economic Research.
- _____ (1968). "Crime and Punishment: An Economic Approach." Journal of Political Economy 76 (March/April): 169-217.
- _____ (1971). The Economics of Discrimination. 2nd ed., Chicago: University of Chicago Press.
- Berg, Ivar (1971). Education and Jobs: The Great Training Robbery. Boston: Beacon Press.
- Bergmann, Barbara R. (1970). Occupational Segregation, Wages, and Profits When Employers Discriminate by Race and Sex. Mimeographed. College Park, Md.: Project on the Economics of Discrimination.
- _____ (1971). "The Effect on White Incomes of Discrimination in Employment." Journal of Political Economy 79 (March/April): 294-313.
- Blaug, Mark (1970). An Introduction to the Economics of Education. Baltimore, Md.: Penguin Books.
- Blinder, Alan S. (1973). "Wage Discrimination: Reduced Form and Structural Estimates." Journal of Human Resources 8 (Fall): 436-455.
- Bluestone, Barry (1970). "The Tripartite Economy: Labor Markets and the Working Poor." Poverty and Human Resources Abstracts 5 (July/August): 15-35.
- _____ (1971). "The Personal Earnings Distribution: Individual and Institutional Determinants." Paper presented to the Econometric Society Winter Meetings (December) in New Orleans, La.
- Boulding, Kenneth (1975). "Towards a Theory of Discrimination." In Some New Perspectives on Equal Employment Opportunity: The AT&T Case, edited by Phyllis A. Wallace, pp. 11-23. Cambridge, Mass.: Massachusetts Institute of Technology Press, forthcoming.
- Bowles, Samuel (1971). "Unequal Education and the Reproduction of Social Division of Labor." Review of Radical Political Economy 3 (Fall/Winter): 110-125.
- Burton, John, and Parker, John (1969). "Interindustry Variations in Voluntary Labor Mobility." Industrial and Labor Relations Review 22 (January): 199-216.

Cain, Glen G., and Watts, Harold W. (1970). "Problems in Making Inferences from the Coleman Report." American Sociological Review 35 (April): 228-242.

_____ (1973). Income Maintenance and Labor Supply: Econometric Studies. New York: Academic Press.

Chamberlain, Neil (1969). "Some Further Thoughts on the Concept of Human Capital." In Cost-Benefit Analysis of Manpower Policies, edited by G. C. Somers and W. D. Wood, pp. 230-248. Madison, Wis: University of Wisconsin, Industrial Relations Research Institute.

Chiswick, Barry R. (1972). "Comment" on 'Schooling and Earnings of Low Achievers.'" American Economic Review 62 (September): 752-755.

_____ (1973). "Schooling, Screening, and Income." In Does College Matter?, edited by L. Solomon, pp. 151-158. New York: Academic Press.

_____ (1974). Income Inequality. New York: National Bureau of Economic Research, Columbia University Press.

Coleman, James S. (1967), et al., Equality of Educational Opportunity ("the Coleman report"). Washington, D. C.: U. S. Government Printing Office.

Culbertson, John (1973). "Income Distribution Theory and Anti-Poverty Programs," Mimeographed. Madison, Wis.: University of Wisconsin, Department of Economics.

*Day, R. H.; Aigner, D. J.; and Smith, K. (1971). "Safety Margins and Profit Maximization in the Theory of the Firm." Journal of Political Economy 79 (November/December): 1293-1301.

Doeringer, Peter B. (1967). "Determinants of the Structure of Industrial Type Internal Labor Markets." Industrial and Labor Relations Review 20 (January): 206-220.

_____ (1969). "Manpower Programs for Ghetto Labor Markets," In Proceedings of the Twenty-first Annual Meeting of the Industrial Relations Research Association, Madison, Wis.: University of Wisconsin, Industrial Relations Research Association.

Doeringer, Peter B.; Feldman, Penny H.; Gordon, David M.; Piore, Michael J.; Reich, Michael (1972). Low-Income Labor Markets and Urban Manpower Programs: A Critical Assessment. Research and Development Findings No. 12, Washington, D. C.: U. S. Department of Labor, Manpower Administration.

- Doeringer, Peter B., and Piore, Michael J. (1971). Internal Labor Markets and Manpower Analysis. Lexington, Mass.: Heath Lexington Books.
- Duncan, Otis Dudley (1968). "Inheritance of Poverty or Inheritance of Race." In On Understanding Poverty, edited by Daniel P. Moynihan, pp. 85-110. New York: Basic Books, Inc.
- Dunlop, John (1957). "The Task of Contemporary Wage Theory." In New Concepts in Wage Discrimination, edited by George W. Taylor and Frank C. Pierson. New York: McGraw-Hill Co.
- _____ (1958). Industrial Relations Systems. New York: Henry Holt.
- Economic Report of the President (1973). Washington, D. C.: U. S. Government Printing Office.
- "Educational Attainment of Workers, March 1973." Special Labor Force Report 161, U. S. Department of Labor. Washington, D. C.: Bureau of Labor Statistics.
- Edwards, Richard C.; Gordon, David M.; and Reich, Michael (1973a). Labor Market Segmentation. A Research Report to the U. S. Department of Labor, Manpower Administration.
- _____ (1973b). "A Theory of Labor Market Segmentation." American Economic Review 63 (May): 359-365.
- Evans, Robert, Jr. (1973). "The Rediscovery of the Balkans." Keis Economic Studies 10.
- Feldstein, Martin S (1973). Lowering the Permanent Rate of Unemployment. A Study Prepared for the Use of the Joint Economic Committee, U. S. Congress. Washington, D. C.: U. S. Government Printing Office.
- Fisher, Lloyd (1953). The Harvest Labor Market in California. Cambridge, Mass.: Harvard Univ. Press.
- Fisher, Lloyd, and Kerr, Clark (1957). "Plant Sociology: The Elite and the Aborigines." In Common Frontiers of the Social Sciences, edited by Mirra Komarovsky. Glencoe, Ill.: Free Press.
- Flanagan, Robert F. (1973). "Racial Wage Discrimination and Employment Segregation." Journal of Human Resources 8 (Fall): 456-471.

- Flanagan, Robert; Strauss, George; and Ulman, Lloyd (1974). "Worker Discontent and Work Place Behavior." Industrial Relations 13 (May): 1-23.
- Franklin, R., and Resnick, S. (1974). The Political Economy of Racism. New York: Holt, Rinehart, and Wilson.
- Freeman, Richard B. (1973). "Changes in the Labor Market for Black Americans, 1948-72." Brookings Papers on Economic Activity, No. 1: 67-120.
- Friedman, Milton (1953). Essays in Positive Economics. Chicago: University of Chicago Press.
- _____ (1962). Capitalism and Freedom. Chicago: University of Chicago Press.
- _____ (1972). An Economist's Protest. Glen Ridge, New Jersey: T. Horton and Co.
- Fuchs, Victor R. (1974). "Recent Trends and Long-Run Prospects for Female Earnings." American Economic Review 64 (May): 236-242.
- Galbraith, John Kenneth; Kuh, Edwin; and Thurow, Lester C., "The Galbraith Plan to Promote Minorities," New York Times Magazine, August 22, 1971.
- Gans, Herbert J. (1968). "Culture and Class in the Study of Poverty: An Approach to Anti-Poverty Research." In On Understanding Poverty, edited by Daniel P. Moynihan, pp. 201-228. New York: Basic Books.
- Gintis, Herbert (1971). "Education, Technology, and the Characteristics of Worker Productivity." American Economic Review 61 (May): 266-279.
- Goldstein, Jon (1972). "The Effectiveness of Manpower Training Programs: A Review of Research on the Impact on the Poor." Paper No. 3, Studies in Public Welfare, Subcommittee on Fiscal Policy, Joint Economic Committee. 92nd Congress, 2d session.
- Goodwin, Richard N. (1974). The American Condition. Garden City, New York: Doubleday and Co.
- Gordon, David M. (1972). Theories of Poverty and Underemployment. Lexington, Mass.: Lexington Books, D. C. Heath and Co.

- Gordon, Nancy M.; Morton, Thomas E.; and Braden, Ina C. (1974). "Faculty Salaries: Is There Discrimination by Sex, Race, and Discipline." The American Economic Review 64 (June): 419-427.
- Gordon, Robert Aaron (1973). "Comment" on paper by Freeman. Brookings Papers on Economic Activity, No. 1: 121-125.
- Gulick, Charles A. (1924). Labor Policy of the United States Steel Corporation. New York: Columbia University Press.
- Gwartney, James D. (1970). "Discrimination and Income Differentials." American Economic Review 60 (June): 396-468.
- Hall, R. E. (1970). "Why Is the Unemployment Rate So High at Full Employment?" Brookings Papers on Economic Activity, No. 3: 369-410.
- Hamermesh, Daniel S. (1971). Economic Aspects of Manpower Training Programs. Lexington, Mass.: Lexington Books, D. C. Heath and Co.
- _____ (1975). "An Economists View of Job Satisfaction and Worker Alienation." Technical Analysis Paper, No. 23. Washington, D. C.: U. S. Department of Labor, Office of the Assistant Secretary for Policy, Evaluation, and Research, January.
- Hanoch, Giora (1967). "An Economic Analysis of Earnings and Schooling." Journal of Human Resources 2 (Summer): 310-329.
- Hansen, W. Lee; Weisbrod, Burton A.; and Scanlon, William J. (1970). "Schooling and Earnings of Low Achievers." American Economic Review 60 (June): 409-418.
- Harberger, Arnold C. (1971). "On Measuring the Social Opportunity Cost of Labour." International Labour Review 103 (No. 6): 559-579.
- Hardin, Einar, and Borus, Michael E. (1971). The Economic Benefits and Costs of Retraining. Lexington, Mass.: D. C. Heath and Co.
- Harris, J. E.; Wachter, M. L.; and Williamson, O. E. (1974). "Understanding the Employment Relation: The Analysis of Idiosyncratic Exchange." Mimeographed. Philadelphia, Penn.: University of Pennsylvania, Department of Economics.
- Harrison, Bennett (1972). Education, Training, and the Urban Ghetto. Baltimore: The Johns Hopkins Univ. Press.
- Henle, Peter (1974). "Economic Effects: Reviewing the Evidence." In The Worker and the Job, edited by Jerome Rosow. Englewood Cliffs, N. J.: Prentice Hall.

- Hobsbawm, E. J. (1967). "The Labour Aristocracy in Nineteenth-Century Britain." In Labouring Men, Chapter 15. Studies in the History of Labour. Garden City, N. J.: Anchor.
- Hollister, Robinson G. (1971). "Education and the Distribution of Income: Some Exploratory Forays." In Education and the Distribution of Income. Paris, France: Vol. 7 of the Conference on Policies for Educational Growth, Organization for Economic Cooperation and Development.
- Holt, Charles C., and David, Martin H. (1966). "The Concept of Vacancies in a Dynamic Theory of the Labor Market." In Measurement and Interpretations of Job Vacancies. New York: National Bureau of Economic Research, pp. 73-141.
- Jencks, Christopher S., et al. (1972). Inequality. New York: Basic Books.
- Jenkins, David (1974). Job Power: Blue and White Collar Democracy. Baltimore: Penguin Books.
- Kain, J. F. (1974). "Housing Segregation, Black Employment, and Metropolitan Decentralization: A Retrospective View." In Patterns of Racial Discrimination, Vol. I: Housing, edited by G. M. Von Furstenberg, B. Harrison, and A. R. Horowitz, pp. 5-20. Lexington, Mass.: Lexington Books, D. C. Heath and Company.
- Kerr, Clark (1950). "Labor Markets: Their Character and Consequences." American Economic Review 40 (May): 278.
- _____ (1954a). "The Balkanization of Labor Markets." In Labor Mobility and Economic Opportunity, edited by E. W. Bakke et al., pp. 92-110. New York: John Wiley and Sons.
- _____ (1954b). "Industrial Relations and the Liberal Pluralist." In Proceedings of the Industrial Relations Research Association, pp. 2-16. Madison, Wis.: Industrial Relations Research Association.
- Killingsworth, Charles C. (1963). "Automation, Jobs, and Manpower." In Nation's Manpower Revolution, U. S., Senate, Subcommittee on Employment and Manpower of the Committee on Labor and Public Welfare, Hearings, 88th Cong., 1st Sess., Washington, D. C., pp. 1476-1494.
- Lampman, Robert J. (1956). "Comments on 'Choice in Labor Markets.'" Industrial and Labor Relations Review 9 (July): 629-636.
- Landes, William (1968). "The Economics of Fair Employment Laws." Journal of Political Economics 76 (July/August): 507-552.

- Layard, Richard, and Psacharopoulos, George (1974). "The Screening Hypothesis and the Returns to Education." Journal of Political Economy 82 (September/October): 985-998.
- Leigh, Duane (1974). "Male Occupational Mobility Between 1965 and 1970: Evidence from the 1970 Census," Mimeographed. Madison, Wis: University of Wisconsin, Institute for Research on Poverty.
- Lester, Richard A. (1946). "Shortcomings of Marginal Analysis for Wage-Employment Problems." American Economic Review 36 (March): 63-82.
- _____ (1947). "Marginatism, Minimum Wages, and Labor Markets," American Economic Review 37 (March): 135-148.
- Levin, Henry M. (1974). "A Decade of Policy Developments in Improving Education for Low-Income Children." Paper presented at the Wingspread Conference Center (February) in Racine, Wisconsin.
- Levitan, Sar A., and Johnston, William B. (1974). Work Is Here To Stay, Alas. Salt Lake City, Utah: Olympus Publishing Co.
- Lewis, H. Gregg (1963). Unionism and Relative Wages in the United States. Chicago: Univ. of Chicago Press.
- Lewis, Oscar (1968). "The Culture of Poverty." In On Understanding Poverty, edited by Daniel P. Moynihan, pp. 187-200. New York: Basic Books.
- Lewis, W. A. (1954). "Economic Development with Unlimited Supplies of Labor." Manchester School 22 (May): 139-191.
- Liebow, Elliot (1967). Talley's Corner. Boston: Little, Brown and Co.
- Linn, Robert L. (1973). "Fair Test Use in Selection." Review of Educational Research 43: 139-161.
- Lucas, Robert E. B. (1972). Working Conditions, Wage-Rates, and Human Capital: A Hedonic Study, Ph.D. dissertation, Massachusetts Institute of Technology.
- *McCall, J. J. (1971). "Probabilistic Microeconomics." Bell Journal of Economics and Management Science 2 (Autumn): 403-433.
- *_____ (1972). "The Simple Mathematics of Information, Job Search, and Prejudices." In Racial Discrimination in Economic Life, edited by A. H. Pascal, pp. 205-224. Lexington, Mass.: Lexington Books, D. C. Heath and Company.

- Machlup, Fritz (1946). "Marginal Analysis and Empirical Research." American Economic Review 36 (September): 519-554.
- Madigan, Francis C., S. J. (1957). "Are Sex Mortality Differences Biologically Caused?" Milbank Memorial Fund Quarterly (April): 202-223.
- Malkiel, Burton G. and Malkiel, Judith A. (1973). "Male-Female Pay Differentials in Professional Employment." The American Economic Review 63 (September): 693-705.
- Mangum, Garth L. (1971). "Manpower Research and Manpower Policy." In A Review of Industrial Relations Research, Vol. II, edited by Gerald G. Somers, pp. 61-128. Madison, Wis.: Industrial Relations Research Association.
- Mangum, Garth L. and Walsh, John (1973). A Decade of Manpower Development and Training. Salt Lake City, Utah: Olympus Press.
- Marglin, Stephen A. (1971). "What Do Bosses Do? The Origins and Functions of Hierarchy in Capitalist Production." Mimeographed. Cambridge, Mass.: Harvard Institute of Economic Research, Harvard University.
- Marshall, Ray (1974). "The Economics of Racial Discrimination: A Survey." Journal of Economic Literature 12 (September): 849-871.
- Masters, Stanley, and Ribich, Thomas I. (1972). "Comment on 'Schooling and Earnings of Low Achievers,'" American Economic Review 12 (September): 755-760.
- Mattila, J. Peter (1974). "Job Quitting and Frictional Unemployment." American Economic Review 64 (March): 235-239.
- Michelson, Stephan (1969). "Rational Income Decisions of Negroes and Everybody Else." Industrial and Labor Relations Review 23 (October): 15-28.
- Mill, John Stuart (1900). Principles of Political Economy 23 vol. 1. Revised edition, New York: The Colonial Press.
- Mincer, Jacob (1962). "On-the-Job-Training: Costs, Returns, and Some Implications." Journal of Political Economy, Special Supplement, 70, part 2 (October): 50-79.
- _____ (1970). "The Distribution of Labor Incomes: A Survey." Journal of Economic Literature 8 (March): 1-26.
- _____ (1974). Schooling, Experience, and Earnings. New York: National Bureau of Economic Research, Columbia University Press.
- _____ (1974). "Unemployment Effects of Minimum Wages." Mimeographed. New York: Columbia University, Department of Economics.

- Mincer, Jacob, and Polacheck, Solomon (1974). "Family Investments in Human Capital: Earnings of Women." Journal of Political Economy, Supplement (March).
- Montagu, Ashley (1952). The Natural Superiority of Women. New York: Lancer Books.
- Mosteller, Frederick, and Moynihan, Daniel P. (1972). On Equality of Educational Opportunity. New York: Vintage Books.
- Moynihan, Daniel P. (1967). "The Negro Family: The Case for National Action," In The Moynihan Report and the Politics of Controversy, edited by Lee Rainwater and William Yancey. Boston: Massachusetts Institute of Technology Press.
- _____, ed. (1968). On Understanding Poverty. New York: Basic Books.
- Myrdal, Gunnar (1963). Challenge to Affluence. New York: Pantheon.
- The National Commission on Technology, Automation, and Economic Progress (1965). Technology and the American Economy. Washington, D. C.: U. S. Government Printing Office.
- Oaxaca, Ronald (1973). "Male-Female Wage Differentials in Urban Labor Markets." International Economic Review 14 (October): 693-709.
- Oi, Walter Y. (1962). "Labor As a Quasi-Fixed Factor." Journal of Political Economy 70 (December): 538-555.
- O'Neill, Dave M. (1970). "The Effect of Discrimination on Earnings: Evidence from Military Test Score Results." Journal of Human Resources 5 (Fall): 475-486.
- _____. (1973). The Federal Government and Manpower. Washington, D. C.: American Enterprise Institute for Public Policy Research.
- Osterman, Paul (1975). "An Empirical Study of Labor Market Segmentation." Cambridge, Mass.: Massachusetts Institute of Technology, Department of Urban Studies and Planning.
- *Parkin, Michael (1970). "Discount House Portfolio and Debt Selection." Review of Economic Studies 37 (October): 469-498.
- Parnes, Herbert S. (1954). Research on Labor Mobility. New York: Social Science Research Council.
- Pencavel, John H. (1970). An Analysis of the Quit Rate in American Manufacturing Industry. Princeton, N. J.: Industrial Relations Section. Princeton University.

- Phelps, E. S. (1970), ed. Microeconomic Foundations of Employment and Inflation. New York: W. W. Norton and Company.
- _____ (1972). "The Statistical Theory of Racism and Sexism." American Economic Review 62 (September): 659-661.
- Piore, Michael J. (1969). "On-the-Job-Training in the Dual Labor Market." In Public-Private Manpower Policies. Madison, Wis.: Industrial Relations Research Association.
- _____ (1970). "Jobs and Training: Manpower Policy." In The State and the Poor, edited by S. Beer, and R. Barringer. Cambridge, Mass.: Winthrop Press.
- _____ (1972). "Notes for a Theory of Labor Market Stratification." Working Paper No. 95. Cambridge, Mass.: Massachusetts Institute of Technology.
- _____ (1973). "The Role of Immigration in Industrial Growth: A Case Study of the Origins and Character of Puerto Rican Migration to Boston," Mimeographed. Cambridge, Mass.: Massachusetts Institute of Technology.
- Rawlins, V. Lane (1971). "Job Corps: The Urban Center as Training Facility," Journal of Human Resources 16 (Spring): 221-236.
- Reder, Melvin W. (1955). "The Theory of Occupational Wage Differentials." American Economic Review 45 (December): 833-852.
- _____ (1964). "Wage Structure and Structural Unemployment." The Review of Economic Studies. 31: 309-322.
- _____ (1969). "The Theory of Frictional Unemployment." Economica 36 (February): 1-28.
- Rees, Albert (1973). The Economics of Work and Pay. New York: Harper and Row.
- Reynolds, Lloyd (1953). "Review" of The Impact of the Labor Union, by D. McCord Wright. American Economic Review 43 (June): 474-477.
- Rogin, Leo (1956). The Meaning and Validity of Economic Theory. New York: Harper and Bros.
- Rosen, Sherwin (1968). "Short-Run Employment Variations on Class-I Railroads in the U. S." Econometrica 36 (July-October): 511-529.
- Rosow, Jerome M., ed. (1974). The Worker and the Job: Coping with Change. Englewood Cliffs, N. J.: Prentice-Hall.

- Ross, Arthur M. (1958). "Is There a New Industrial Feudalism?" American Economic Review 48 (December): 903-920.
- Rottenberg, Simon (1956). "On Choice in Labor Markets." Industrial and Labor Relations Review 9 (January): 183-199.
- Seligman, Ben B. (1968). Permanent Poverty: An American Syndrome, p. 238. Chicago: Quadrangle Books.
- Sheppard, Harold L., and Herrick, Neil Q. (1972). Where Have All the Robots Gone? New York: Free Press.
- Silver, Morris (1970). "Employee Tastes for Discrimination, Wages, and Profits." In Economics: Mainstream Readings and Radical Critiques, edited by David Mermelstein, pp. 127-130. New York: Random House.
- Somers, Gerald G., ed. (1968). Retraining the Unemployed. Madison: Univ. of Wisconsin Press.
- Stigler, George J. (1946). "The Economics of Minimum Wage Legislation." American Economic Review 36 (June): 358-365.
- _____ (1947). "Professor Lester and the Marginalists." American Economic Review 37 (March): 154-157.
- Strauss, George (1974). "Job Satisfaction, Motivation, and Job Redesign." In Organizational Behavior: Research and Issues, pp. 19-50. Madison, Wisconsin: University of Wisconsin, Industrial Relations Research Association.
- Tabb, William (1970). The Political Economy of the Ghetto. New York: W. W. Norton.
- Tannenbaum, Frank (1951). A Philosophy of Labor. New York: Knopf Publishers.
- Terkle, Studs (1974). Working. New York: Random House.
- Thaler, Richard and Rosen, Sherwin, (1974). "The Value of Saving a Life: Evidence from the Labor Market," Discussion Paper 74-2, Department of Economics, University of Rochester.
- Thurow, Lester C. (1968). "The Determinants of the Occupational Distribution of Negroes." In The Education and Training of Racial Minorities, Proceedings of a Conference. Madison: The University of Wisconsin, Center for Studies in Vocational Education.
- _____ (1969). The Economics of Poverty and Discrimination. Washington, D. C.: The Brookings Institution.
- _____ (1972). "Education and Income," The Public Interest, No. 28 (Summer): 66-81.

- Thurow, Lester C., and Lucas, Robert E. B. (1972). "The American Distribution of Income: A Structural Problem." Committee Print. U. S. Congress, Joint Economic Committee.
- *Tobin, James (1958). "Liquidity Preference As Behavior Towards Risk," Review of Economic Studies 25 (February): 65-86.
- _____ (1972). "Inflation and Unemployment." American Economic Review 62 (March): 1-18.
- _____ (1965). "On Improving the Economic Status of the Negro," Daedalus, (Fall): 78-98.
- Todaro, Michael P. (1969). "A Model of Labor Migration and Urban Unemployment in Less Developed Countries." American Economic Review 59 (March): 138-148.
- Tolles, Arnold N. (1964). Origins of Modern Wage Theory. Englewood Cliffs, N. J.: Prentice-Hall, Inc.
- Valentine, Charles A. (1968). Culture and Poverty: Critique and Counter-proposals. Chicago: Univ. of Chicago Press.
- Wachtel, Howard M. (1972). "Capitalism and Poverty in America: Paradox or Contradiction?" American Economic Review 62 (May): 187-194.
- Wachter, Michael (1974). "The Primary and Secondary Labor Market Mechanism: A Critique of the Dual Literature." Paper presented to The Brookings Institution Economic Panel Meetings, December 5-6, 1974. Washington, D. C.: The Brookings Institution.
- Weiss, Leonard W. (1971). "Quantitative Studies of Industrial Organization." In Frontiers of Quantitative Economics, edited by M. Intriligator. Amsterdam: North Holland Publishing Co.
- Weiss, Leonard W., and Williamson, Jeffrey G. (1972). "Black Education, Earnings, and Interregional Migration: Some New Evidence." American Economic Review 62 (June): 372-383.
- Weiss, Randall D. (1970). "The Effect of Education on the Earnings of Blacks and Whites." Review of Economics and Statistics 52 (May): 150-159.
- Weisskoff, Francine Blau (1972). "'Women's Place' in the Labor Market," American Economic Review 62 (May): 161-166.
- Welch, F. (1973). "Education and Racial Discrimination." In Discrimination in Labor Markets, edited by Orley Ashenfelter and Albert Rees, pp. 43-81. Princeton, N. J.: Princeton Univ. Press.
- _____ (1974). "Minimum Wage Legislation in the United States." Santa Monica, Calif.: Rand Publication.

Wool, Harold (1973). "What's Wrong With Work in America." Monthly Labor Review 96 (March): 38-44.

Work in America (1973). Report of a Special Task Force to the Secretary of Health, Education, and Welfare, prepared under the auspices of the W. E. Upjohn Institute for Employment Research. Cambridge, Mass.: Massachusetts Institute of Technology Press.

Wright, D. M., ed. (1951). The Impact of the Labor Union. New York: Harcourt Brace and Company.

Zellner, Harriet (1972). "Discrimination Against Women, Occupational Segregation, and the Relative Wage." American Economic Review 62 (May): 157-160.

Zeman, M. (1955). "A Quantitative Analysis of White--Non-White Income Differentials in the United States in 1939." Ph.D. dissertation, University of Chicago.