

"CLASS ANALYSIS AND TECHNOLOGICAL DETERMINISM"

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The role of technology and its interaction with other elements of social structure has been one of the least examined questions in social theory. As Gordon (1976:35) has recently pointed out, there is a strong streak of technological determinism in both non-Marxist and orthodox Marxist literature. But, for numerous reasons, the charge of 'technological' or 'economic determinism' has been levelled far more commonly at Marxist theory. Rarely does one encounter an equivalent assessment of Weberian theory, although it can be shown* that the Weberian literature is heavily imbued with technological determinist assumptions.

In large part, the assumptions of technological determinism which underly the Weberian view have been obscured by the emphasis which Weber and later Weberian writers place on subjective and non-economic factors in social life. It has generally been assumed that this emphasis in some way contradicts the assumptions of a technological determinist view. In fact, this is not the case. Technological determinism is not a theory that defines the immediate motives of men as economic; indeed, it implies no psychological theory at all. Rather, it assumes that technological and scientific progress exert a determining influence over social institutions, that technological development determines the division of labour, and that social development can best be understood in terms of technological advance. More concretely, it assumes that the modern organization of work — the division of labour within industry, the existence of various levels of skilled labour and th

*The argument of this paper has been compressed from a much more lengthy review of the Marxist and Weberian concept of class and the division of labour. If its arguments appear assertive, rather than demonstrative, this —at least in part— is due to the limitations of the present presentation.

growth of administrative hierarchies — are determined by the exigencies of advancing technique, i.e., by the technical requirements of modern industrial production.

As a number of writers have observed, Weber's views on class and the division of labour are heavily imbued with the assumptions of technological determinism (see Johnson, 1976:5-8; also Navarro, 1976:34). Many features of social organization (the growth of bureaucracy, for example) were viewed by Weber as the product of technological development and the technical demands of an industrial economy.¹ The concept of 'legal-rational' authority, around which Weber's views on bureaucracy revolve, is a typification of the type of normative (value) structure presumably imposed by the technical imperatives of expanding technique. This concept expresses all that is essential to the Weberian tradition: the view that social development is a process of "cumulative technological rationalization" (see Gerth and Mills, 1967:51). According to this principle, history can be viewed as the gradual, if uneven, emergence of social forms corresponding to an increasingly complex technique and its requirements.

Recent theoretical works within the Weberian tradition remain completely wedded to this technological determinist outlook. Two recent, and popular works, Frank Parkin's Class Inequality and Political Order (1972) and Anthony Giddens' The Class Structure of the Advanced Societies (1973) exemplify the reliance upon technological determinist assumptions which characterizes much of modern sociology. Both these writers address themselves directly to class inequality in capitalist societies, yet fail to adequately conceptualize their subject matter precisely because they accept the division of labour as (technologically) given.

1. According to Weber, bureaucracy can be viewed as a technical requirement of complex organization, i.e., it is technologically determined. "The decisive reason for the advance of bureaucratic organization has always been its purely technical superiority over any other form of organization" (1968:973)

On an immediate level, this is evident in the inability of Parkin and Giddens to move beyond a description of immediate market processes in their attempt to account for class inequality. Class differences, according to these authors, arise from differences in skills, education, and expertise and the manner in which these potential resources are actualized by the market. Parkin argues that differences in class position (which he defines, after Weber, as "market position") are determined by the skills and knowledge necessary for performing different occupational roles.

..... marketable expertise is the single most important determinant of occupational reward.
 . . . the greater the skills or knowledge commanded by an occupation, the greater is its relative scarcity in the market place (1972:21)

Similarly, for Giddens, class differences derive from differences in skill and education (conceptualized as different "market capacities")

. . . . possession of recognized 'skills' — including educational qualifications — is the major factor influencing market capacity. (1973:103)

Parkin and Giddens thus offer an "explanation" of class differences which focuses upon the occupationally relevant characteristics (skills, education, expertise, etc) of class agents.

The suggestion that class differences (i.e., differences in market position) are determined by differences in skill and education level is singularly uninformative as an explanation of class inequality. The attempt to explain class differences in terms of differences in skills and education merely pushes the need for explanation one step further back. If class differences are determined by differences in

skill and education, what (one must ask) are the factors that determine differences in skill level? The existence of differentially skilled labour-power is hardly something that can be taken for granted in class analysis, especially when these differences are thought to account for class inequality. Differences in skill are not the "givens" around which the class structure is built; these differences broadly correspond to positions in the social division of labour, the determining conditions of which must themselves be theorized. Concretely, it is necessary to ask what are the determinants of the modern division of labour which requires differentially qualified labour-power.

The failure of Parkin and Giddens to theorize the problem at this level (i.e., to relate skills to specific positions within production and to analyze the development and inter-relation of these positions) is readily explained by the technological determinist outlook which informs their treatments. Giddens, in fact, is reasonably clear on this point. The division of labour and the structure of "paratechnical relations" ^{in industry,} he argues, corresponds to the level of industrial development; under these conditions a "wholesale reorganization" of the division of labour is quite impossible. In an argument not fundamentally different from that earlier advanced by Dahrendorf (1959:36-41), Giddens charges Marx with failing to recognize that many of the features of the capitalist division of labour are, in fact, features of industrialism per se, not a product of antagonistic relations of production (p.136). This is another way of saying that the modern division of labour is technologically determined, and that Marx erred in not recognizing this..

Parkin is far less direct in his treatment of these questions. Like Giddens, he is critical of so-called "technocratic" and "convergence" writers who assume a direct and inevitable correspondence between the level of technological development and social structure. He argues that "rewards" within the occupational structure and access (mobility) within the class structure are variable i.e., not technologically determined (p. 140-159). Yet, as a criticism of technocratic writers, this argument remains weak, for it fails, in any way, to question the theoretical foundation of technocratic theory: a technological determinist explanation of the division of labour. Insofar as it accepts the existing division of labour and corresponding skill differentials as given, Parkin's argument implicitly falls back upon a technological determinist explanation of these phenomena.

Is the division of labour in capitalist societies a product of the technical exigencies of large scale industrial production? Can the existing pattern of "occupational differentiation" be taken as a given in class analysis, as neo-Weberian argument suggests? These questions, which are central to class analysis, have been (uncritically) answered in the affirmative by the majority of non-Marxist sociologists. Celebrants of the technocratic thesis of "post-industrialism", such as Bell, Kerr, Inkeles and Etzioni (to name only a few), not only accept this technological determinism, they relish in its implications. Although they remain critical of some of the more egregious conclusions drawn by 'post-industrialist' theorists, progressive Weberian writers such as Giddens and Parkin remain captive to the technological determinism which underlies the 'post-industrialist' view. This is a legacy of Weber that is not easily shaken off.

In contrast, recent Marxist writers have tended to take a more critical view of the relationship between technology and social structure. Herbert Gintis (1976:37), for example, writes of the "dynamic interaction" between technology and social relations — a view quite removed from the economic and technological determinism commonly ascribed to Marxist writers. In Gintis' view, the division of labour in capitalist society is not technologically determined; rather, it is the product of an interlacing set of management priorities designed to increase worker productivity while structuring the workplace in a manner consistent with capitalist relations of production.

Braverman, in Labor and Monopoly Capitalism (1974), has tackled the relationship of technology and the division of labour in more depth. Braverman has argued that while the proliferation of technical operations within production is determined by the level of technological development, the fragmentation of these operations (i.e., their assignment to different workers) is socially determined, determined, more specifically, by capital's interest in maximizing the productive output of the labour-power it employs. By dissociating the labour process into a series of fractional operations, capital not only gains greater control over the fragmented labour process, it is, also, able to reduce the overall wage bill. "The labour capable of performing the process may be purchased more cheaply as dissociated elements than as a capacity integrated into a single worker" (p. 81). The fragmentation and routinization of tasks which characterize the modern organization of work are thus explained in terms of capital's domination over the labour process, not the inexorable demands of technique.

Braverman's work offers a vivid contrast to the descriptive and ahistorical account of class inequality presented by Parkin and Giddens. Whereas these Weberian writers provide an immediate description of stratification processes based on skill and education differences, Braverman provides an historical analysis of changes in the division of labour which are thought to determine the extended reproduction of differentially skilled labour-power. Braverman's analysis thus offers an explanation of the source of skill and education differences which enter neo-Weberian analyses as "givens". In this connection, he argues that the dissociation of the labour process in the large scale industrial enterprise involves a gradual destruction of general skills, and the creation of a large category of unskilled manual labour alongside a category of technical and scientific specialists who monopolize knowledge of the labour process. This division of labour has all the appearances of a technically ordained specialization; yet it expresses, above all else, the separation of the immediate producers from control over production, and their consequent inability to develop an alternative division of labour. . . (See also Poulantzas, 1975, for whom the division between manual and mental labour represents a condition of ideological domination of the working class; also, Gorz, 1972)

These changes wrought by capital in the labour process are thought to be responsible for the transformation of the occupational structure over the past century. Whereas in craft production each worker is a "repository of human technique for the labour process of that branch" (p. 109), the dissociation of the labour process creates new categories of workers who perform work which is largely mental (p. 109, 239). Braverman depicts this transformation in terms

of a separation between the process of execution and conception in production:

The novelty of this development during the past century lies not in the separate existence of hand and brain, conception and execution, but the rigor with which they are divided from one another, and then increasingly subdivided, so that conception is concentrated insofar as possible, in ever more limited groups within management or closely associated with it (p. 125)

For Braverman, the separation of conception from execution, and the reduction of all labour to increasingly fragmented elemental tasks is a product of social relations of production, not of technical exigency.

Experiments conducted on a limited scale, such as those at electronics and automotive plants, have already demonstrated that productivity is not tied to any particular form of work organization. Indeed, as Gordon (1976:22) has pointed out, there appears to be no theoretical reason why a number of alternative organizational forms might not yield equivalent productivities.

Why then does industrial organization remain tied to the assembly-line model? What accounts for the division of labour as we now know it, in the factory and in society? Weberian theorists implicitly assume that, at least in broad outline, the division of labour is technologically determined. The general explanation offered by Marxist writers is that the division of labour is determined by the social relations of production, specifically, capital's interest in increased productivity and in maintaining the authoritarian and hierarchical structure of the enterprise. (Braverman, 1974; Carchedi, 1975; Gintis, 1976; Gordon, 1976). Job fragmentation and the separation of manual and mental labour, execution from conception, are related to political and ideological relations of production.— not merely quantitative technical efficiencies. Technical imperatives

remain important, but the way these imperatives are translated into a detailed division of labour is determined by those who control industrial production, not the "industrial system" itself.

Quite clearly, it is impossible to establish the precise relationship between technology and social relations at the theoretical level. This demands a concrete study of the division of labour and the specific influences which determine its development. Technological determinist assumptions have long dominated theoretical thinking in this area; these assumptions are firmly imbedded in the dominant ideology where they serve to legitimize existing social relations. Serious questioning of these assumptions promises to bring sociology closer to the potentialities for overcoming class inequality — potentialities that, to date, have been obscured by determinist ideologies.

REFERENCES

- Braverman, Harry
1974 Labor and Monopoly Capitalism, New York
Perhaps the most important
book on the development of the division of
division available.
- Carchedi, G
1975 "On the Economic Identification of the New Middle Class",
Science and Society, London A useful, if somewhat
laboured, discussion of the middle class written
from a Marxist perspective.
- Dahrendorf, Ralf
1959 Class and Class Conflict in Industrial Society,
Stanford University Press A well argued
refutation of the Marxist theory of class; widely
recognized as such
- Gerth, H.H. and C.Wright Mills (ed)
1967 Introduction to From Max Weber:
Essays in Sociology, New York
- Giddens, Anthony
1973 The Class Structure of the Advanced Countries,
London, This work is a sophisticated Weberian
synthesis of the major themes in the stratification
literature.
- Gintis, Herbert
1976 "The Nature of Labor Exchange and the Theory of
Capitalist Production" Review of Radical Political
Economists, Vol 8, No. 2, An interesting and
very readable Marxist view of the internal
structure of the capitalist firm. Gintis considers
a number of important sociological questions,
including sexual and racial stratification.
- Goetz, André
1972 "Technical Intelligence and the Capitalist Division of
Labour", Teleos, Vol 12 May usefully be
read alongside Braverman's more detailed study.
- Gordon, David M.
1976 "Capitalist Efficiency and Socialist Efficiency"
Monthly Review, Vol 28, No 3 A general theoretical
consideration of the limitations of the capitalist
firm to introduce alternative technologies.
Very readable, regrettably short.
- Johnson, Terrence,
"Professions, Class and the State", University
of Leicester (mimeo) A path-finding Marxist
analysis of the professions. Hopefully soon to
appear in print.
- Navarro, Vicente
1976 "The Fetishism of Industrialism: A Critique of Ivan
Illich", Monthly Review, Vol 28, No 5 Only
tangentially related to the present discussion.
Offers a critique of counter-institutionalists.
- Parkin, Frank
1972 Class Inequality and Political Order, London
A very readable Weberian survey of the stratification
literature. The central line of argument has
been considerably modified in the author's later
work.

Poulantzas, Nicos Classes in Contemporary Capitalism, London
1975 A theoretical re-working of the Marxist view of
class. Quite readable, and brilliantly presented.

Weber, Max Economy and Society, New York
1968