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THEORY AND RESEARCH ON INDUSTRIALIZATION

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Abstract

Sociological approaches to industrialization are framed by two major theories: social differentiation, based on classical liberalism and Durkheimian sociology, and uneven development, derived from the critical work of Marx and Weber. Although social differentiation continues to influence general treatments of the subject, uneven development has proven more fruitful in research. Important themes in recent research are reviewed by means of a property space based on epochs and processes of industrialization. A summary of five key research areas describes the important issues in current work and, by way of conclusion, suggests some convergence.

INTRODUCTION

Industrialization plays a central, yet ambiguous, role in social theory. On the one hand, industrialization is often understood as the principal agent in the making of modern society: "The industrial revolution marks the most fundamental transformation of human life in the history of the world recorded in written documents" (Hobsbawm 1968:13). On the other hand, industrialization is sometimes construed as simply one element in a set of changes, such as urbanization and rationalization, which combine in a broader evolutionary transformation: "The industrialization process . . . is an expression of a complex of forces that are really rooted in more general processes, in what are most aptly characterized as the processes of modernization" (Berg 1979:6). Most features of modern society are traced to the influence of industrialization

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in some theory. Yet in the theorizing about industrial society, the interconnections and causal relations among these processes are matters of considerable debate. Controversy surrounds such basic questions as these: When did industrialization begin? Has it ended in some "post-industrial" societies? How is it causally and temporally related to urbanization? Has it developed along one path or many? How does it affect the family and social classes?

Such ambiguities are common in social theory, and when they force themselves upon us as distressing anomalies, they facilitate critical research. In the last two decades sociological theories of industrialization have been hounded by anomaly. For example, growth models of industrial takeoff that posit a repetition of Western development have not reflected reality in the Third World. Industry has come to many less developed countries without initiating growth in other sectors of the economy and society. Developed countries once assumed to be sailing smoothly on a course of sustained growth are now suffering the effects of decline in heavy industry and the internationalization of production in many aspects of high technology. Plants close, industrial communities wither, and "sunrise" industries seem unable to reabsorb workers. Conventional sociological wisdom cannot account for the change. Yet refutation of standard models has stimulated and coincided with a rekindled interest in comparative and historical research. The combined result of these circumstances (ambiguity, anomaly, and new research) is a reinterpretation of the industrialization process that carries fundamental implications for social theory.

This chapter is intended to show that current sociological theories do not explain what we have recently learned from history and what we are now witnessing in the development of industrialization. The argument relies on resurgent historical and comparative research that challenges the old theories and suggests some convergence on new explanations. Finally, I shall venture some generalizations drawn from the confrontation of theory and research and suggest that the themes for a new theoretical interpretation are at hand. The argument, accordingly, proceeds in three steps. First, I characterize two major and sharply contrasting theoretical traditions that have shaped sociological thinking about industrialization. Although these theories are now in doubt, they have effectively stimulated critical research, and they still retain many adherents. Second, I develop a purely heuristic property space within which the sprawling research literature can be organized and critical foci highlighted. The purpose here is to show in exemplary detail how current theory fails us and what alternative interpretations demand attention in a more complete explanation. Third, I propose a synthesis of current research and the nascent theory it implies.

CONVENTIONAL INTERPRETATIONS

In succinct form, sociological theory divides into two camps on the meaning and development of industrialization: first, the classic liberal theory of an evolving division of labor generalized to social differentiation and, second, the critical theory of uneven development. The paradigms are fully contrasted in Durkheim and Marx respectively, although each perspective antedates these writers and has been reformulated in relation to succeeding generations of industrial society. Liberal theory combines assumptions from laissez faire economics and the theory of comparative advantage from the late eighteenth century with the biological and evolutionary metaphors that appear in Durkheim and Spencer. These are carried into contemporary thinking by Parsons and his followers. The theory of uneven development begins with the misgivings of St. Simon and is amplified in the varied, yet related, criticisms of industrial capitalism developed by Marx (1867), Weber (1946), Schumpeter (1935), Polanyi (1944), and Thompson (1963). In the most general terms these orientations to industrialization highlight fundamental differences and the competing images that have prompted critical research. The terms "social differentiation" and "uneven development," are shorthand, of course, and might be hyphenated—in the first instance with specialization and integration or, in the second, with exploitation and contradiction.

Social Differentiation

Social differentiation, at bottom, combines classical liberalism and evolutionary precepts in a theory of social change aimed primarily at explaining the consequences of major transformations—in the modern era, that is, the consequences of industrialization. Durkheim granted that Adam Smith and John Stuart Mill had correctly identified a new division of labor as the outstanding fact of eighteenth-century society; they failed only to understand "that the law of the division of labor applies to organisms as to societies . . . the more specialized the functions of the organism, the greater its development. . . . The division of labor in society appears to be no more than a particular form of this general process" (Durkheim 1893:41). Durkheim posed "the problem" of industrial society in terms of fragmentation.

> We need have no further illusions about the tendencies of modern industry; it advances steadily toward powerful machines, towards greater concentrations of forces and capital, and consequently to the extreme division of labor. Occupations are infinitely separated and specialized, not only inside the factories, but each product is itself a speciality dependent on others . . . the principal branches of the agricultural industry are steadily being drawn into the general movement. Finally, business itself is ingeniously following and reflecting in all its shadings the infinite diversity of industrial enterprise. (Durkheim 1893:39)

Fragmentation and the dissolution of older forms of social solidarity produced the need for a new basis of social integration, a need that Durkheim reasoned could only be met by occupational groups. Whatever the merits of this proposal, subsequent formulations of the social differentiation approach have continued to emphasize the question of integration. Indeed, the most influential modern statements of the theory by Parsons and Smelser identify the "structural differentiation" of social systems with evolutionary stages and economic development, taking the "functional requirement" of new forms of social integration at each stage as the key to institutional life (Parsons & Smelser 1956; Smelser 1963; Parsons 1966).

Moore's (1965) volume on *The Impact of Industry* summarizes the theory under three general headings. These are "conditions for industrialization," "first order consequences," and "reverberations." The "conditions for industrialization" correspond to liberal prescriptions for economic development: rational organization, alienable property, wage labor, political order, and entrepreneurial values. The "first-order consequences" of economic growth show a "remarkably high degree of uniformity in the industrial system": productive organizations in which work relationships are technologically determined and therefore functionally specific, impersonal, and affectively neutral; administrative hierarchies in which rational authority is organized on a pyramid principle; sectoral relocation of the labor force that follows modal shifts from agriculture to manufacturing and to services; a varied association between urbanization and industrialization that moves in time from industrialization without urbanization to their close correlation and, later, to overurbanization. Finally, among the "reverberations" produced by industrialization, Moore includes: predominance of the nuclear family; urban social disorganization; the substitution of formal for informal control; and complex stratification on the axes of occupation, skill, and economic criteria as the primary determinants of status.

Moore's model defies summary in a short space, in part because it allows for wide variation across time and space. The key analytic point, however, is that where a generalization (e.g. sequential changes in the sectoral distribution of the labor force) is first identified and then qualified, the factors that explain variations are themselves closely tied to the liberal evolutionary approach (e.g. technological changes in production, markets and communication, or an upgrading of skill levels).

Although the model of social differentiation is derived mainly from a reading of the Western industrial experience, it has been extended in two directions. First, it has been applied as a diagnostic and explanation for underdevelopment. On the assumption that development follows the same path in all societies, structural differentiation is construed as a set of requirements that Third World countries must satisfy. "The concept of structural

differentiation can be employed to encompass many of the structural changes that accompany the movement from pre-industrial to industrial society . . . In the transition from domestic to factory industry, the division of labor increases, and the economic activities previously lodged in the family move to the factory . . . Empirically we may classify underdeveloped or semi-developed economies according to how far they have moved along this line of differentiation" (Smelser 1963:106–7). Second, present trends such as advances in information technology, service sector expansion, and labor professionalization are projected in the concept "post-industrial society [which] emphasizes the centrality of theoretical knowledge as the axis around which new technology, economic growth and the stratification of society will be organized" (Bell 1973:113).

Although the theory of social differentiation has recently come under attack, it is far from moribund. Much research is still animated by its claims, and it continues to be accepted as textbook sociology (e.g. Berg 1979).

Uneven Development

Critical theories of industrialization are fundamentally concerned with the historical process as it reveals the "laws of motion" of capitalist development. The distinctly modern phase of this process involves the advent of what Marx called "large-scale industry," itself an outgrowth of agriculture and "domestic industry" (sometimes "handicrafts"). The process is complex, a choice example of the uneven nature of capitalist development. On one hand, "machinery does away with co-operation based on handicrafts, and with manufacture based on the handicraft division of labor"; on the other hand "(w)ith the development of the factory system and the revolution in agriculture that accompanies it, production in *all* the other branches of industry not only *expands,* but also alters its character" (Marx 1977:588–90, emphasis added). Elsewhere, Marx describes a process in which capitalist manufacture may at first "formally" subsume noncapitalist labor in independent workshops, merely annexing it without changing its social relations of production, and later may move to its "real subsumption" in which work and industrial organization are integrated with fully capitalist forms.

Marx's point, of course, is that industrial development is an uneven and contradictory process: "large-scale industry, by its very nature, necessitates variation of labor" and so at times it even "reproduces the old division of labor with its ossified particularities" (Marx 1977:617). Uneven development is not random, however. The basic law governing these varied appearances is the drive for profit in a competitive economy: "the division of labor in manufacture is merely a particular method of creating relative surplus-value" (Marx 1977:486). Having established the intricacies of this process, Marx

moves to the familiar features and consequences of large-scale industry. In brief, three major tendencies characterize the transformation: concentration-centralization, proletarianization, and crisis.

Concentration is the process in which capitalist enterprises become large as a result of growth based on economies of scale. Centralization is bigness resulting from the acquisition of other less competitive enterprises. Both tendencies describe the long-run direction of industrialization, although they, too, exhibit unevenness and contradiction. Bigness as a result of concentration entails the destruction of small-scale enterprise and the incorporation of labor in large firms with a detailed division of labor and hierarchical control structure. Bigness stemming from centralization means oligopoly. Among the manifold consequences of both tendencies Marx identified a "new and international division of labor . . . suited to the requirements of the main industrial countries [that] converts one part of the globe into a chiefly agricultural field of production for supplying the other part, which remains a pre-eminently industrial field" (Marx 1977:579–80).

Proletarianization is defined by the steady decline of independent production and self-employment and a correlative increase in the numbers of wage laborers or workers dependent on the sale of their labor to capitalists. In tandem with other changes, wage labor in the mature stage of capitalist development is absorbed mainly in large-scale industry where conditions (density, exploitation, alienation) are ripe for the creation of a self-conscious, militant working class.

The meaning of crisis in Marxian theory is manifold and controversial (Mandel 1975, O'Connor 1984). Here, it suffices to say that Marx understood capitalist development as inherently crisis prone. Crises vary in magnitude in the sense that some are overcome in the adaptation of capitalist development to changing conditions (overproduction, underconsumption, falling rates of profit, etc), yet in the long run capitalism undermines itself through the antagonistic forces it generates. Inherent crisis implies that change is a conflictual process (rather than a steady evolutionary upgrading through differentiation) and that industrialization will take distinctly different forms under different historical conditions. Early and late (or European and Third World) industrialization will not follow the same pattern.

Although Marx was the earliest and most prolific exponent of the theory of uneven development as it is understood today, the perspective was never uniquely Marxian, and much of its appeal stems from other critics of capitalist society. Weber (1946:196) identified industrial capitalism as the principal force behind the bureaucratic rationalization of modern society. Where Marx treated bourgeois thought almost exclusively as an expression of class-based ideology, Weber saw its deeper penetration to the institutional foundations and individualistic ethic of contemporary society. Yet Weber's critique ex-

tended beyond a restoration of the analysis of idealism which Marx had rejected. In concrete empirical work, Weber addressed the uneven development of the agrarian and industrial regions of Germany. He carried this analysis to the key role of the modern state, which grows through the expropriation of private holders of power: "The whole process is a complete parallel to the development of the capitalist enterprise through the gradual expropriation of the independent producers" (Weber 1946:82). Polanyi (1944:40) drew on Marx and Weber for his analysis of exploitation under the market economy as a product of the industrial revolution: "how shall this revolution itself be defined? We submit . . .[that] one basic change, [is required:] the establishment of market economy, and that the nature of this institution cannot be fully grasped unless the impact of the machine on a commercial society is realized."

Recent contributions to the theory of uneven industrial development have taken several directions and different stances toward the classic texts. Baran & Sweezey (1966) emend Marx's theory to explain a posited trend toward monopoly capitalism in the United States; they argue that giant U.S. corporations have rates of profit that do not fall owing to state support. Among other things, this thesis rejects the notion of a "managerial revolution" and the claim that the control of industry has shifted to a class of administrative experts whose methods differ from owners. In some ways Dahrendorf (1959) takes the other side of this argument by rewriting Marx in a Weberian manner. He claims that the political and industrial realms are separate and, therefore, that class conflict focuses on delimited issues of authority in the enterprise and unions.

Contemporary emphases in the theory of uneven development are drawn alternately from Marx and Weber. Braverman (1974) develops the radical alternative: He argues that monopoly capitalism degrades and deskills labor, first in industry and later in services, in the interests of management control and with the support of the state. In a related and more sophisticated vein, Mandel (1975) argues that under "late capitalism" industrialization spreads to all branches of the economy in a pattern of "complete," rather than post, industrialism. Neo-Weberian treatments of industrial society stress power and authority, state autonomy, and class determination in market situations that go beyond the sphere of production (e.g. Giddens 1973). Finally, perhaps the most synthetic application of the theory of uneven development has been in studies of the Third World that examine the intersection of global economic forces, the state, and individual societal conditions of class struggle, all of which combine in patterns of "associated dependent development" (e.g. Cardoso & Faletto 1979). As in the case of social differentiation theory, uneven development has its classical expression and a variety of reformulations designed for specific times and topics.

EPOCHS AND PROCESSES

Social differentiation and uneven development together effectively frame current research on industrialization. Each theory has stimulated waves of research that sometimes undercut its own foundation and reveal the bedrock beneath. The theory of uneven development has proven more fruitful, particularly in the continuing importance of its emendations, but it is far from complete or definitive. The two paradigms, however, are seldom directly comparable because they focus on different periods of time, explore different ramifications of industrialization, and describe in different vocabularies events that are not themselves in dispute—although the significance and causal relations surrounding those events usually are issues for contention.

The theories differ on conceptual and substantive issues. Among the principal points of conceptual disagreement is, first, the very nature of industry and industrialization. Social differentiation stresses technology, the factory, and the industrial revolution, beginning in the late eighteenth century. "*Industry* refers to the fabrication of raw materials into components or finished products by primarily mechanical means dependent on inanimate sources of power" (Moore 1965:4). To the extent that Marx speaks for the uneven development school, ("domestic") industry is taken as beginning long before the advent of "large-scale industry" in Britain; and two eminently social, rather than technological, conditions establish its distinctive character. "The *collective worker,* formed out of the combination of a number of specialized workers, is the item of machinery specifically characteristic of the manufacturing period . . .[and the] division of labor in manufacture requires that a *division of labor in society* should have attained a certain degree of development" (Marx 1977:468, 473, emphasis added). In the first case, industry is a temporally specific and essentially technological phenomenon; in the second, it is fundamentally social and broadly historical.

With regard to substantive questions, second, social differentiation posits a general model of industrialization (the term is used synonomously with economic development) applicable to separate societies in different periods of time. Essentially the same conditions must be met everywhere to initiate development, and the same kinds of general consequences are expected to follow. Uneven development is historically specific. The social organization of domestic industry differs dramatically from large-scale industry in capitalist society, just as today's Third World confronts a new social form in dependent development. Third, social differentiation has promoted research centered mainly on the consequences of industrialization, changes in institutions such as "mass society," bureaucracy, and the family (e.g. Smelser 1959). Uneven development has focused heavily on labor, class conflict, and underdevelopment.

These differences in theory and research suggest the need for a schema for

organizing the study of industrialization, especially the recent work that has moved beyond conventional paradigms. The discussion so far provides a necessary first approximation based on major theoretical orientations and the empirical avenues they have opened. To complete a delineation of the field, we now reverse the logic by examining exemplary recent research and asking what theoretical themes animate the work. Some guidelines are needed, however, and here the first approach abets the second by suggesting underlying dimensions.

Drawing on the previous discussion, I propose a property space based on key moments in the development of industrialization and on central analytic issues: epochs and processes. The property space is substantive in the sense that the categories subdividing epochs and processes are informed by the research literature rather than by any logical presumptions of exclusivity or exhaustiveness. The epochs are less chronological than distinctive historical experiences, according to research. The processes constitute a considered sampling of major preoccupations in research, and the list could easily be extended or reorganized. One more proviso: The property space, abbreviated as it is, still includes 25 cells or distinct historical expressions of industrialization.

In the space available here, just 5 of those cells will be discussed, and each one briefly. The 5-part exposition attempts to describe some of the most salient areas of current research on industrialization, but the remaining 20 cells designate lively fields of inquiry. The diagonal intersection of epochs and processes is labeled for the 5 discussion topics: protoindustrialization, culture and class struggle, control structures, proletarianization and the informal sector, and deindustrialization. These designate active research issues, but not the only kind of work described by the intersection. The cells not discussed here also represent important research topics. For example, the cell labeled "V" would include the enormous literature on the causes of the industrial revolution (e.g. Hobsbawm 1968); "W" would embrace studies of social class under conditions of "late" industrialization such as those in the United States and Germany (e.g. Moore 1978); "X" includes the forms of enterprise in developing areas, such as the multinational corporation and its novel patterns of control (e.g. Arrighi 1970); "Y" addresses the sectoral organization of work and casual labor under "mature" industrialization (e.g. Stedman-Jones 1971); "Z" focuses on the crisis of feudalism that helped precipitate industrial revolution (e.g. Anderson 1974). In short, the property space provides one way of organizing and highlighting a very large subject.

Protoindustrialization

Recent research has reopened the question of when and how industrialization began. Conventional interpretations hold that the industrial revolution was an abrupt and qualitative change in social organization that commenced around

Table 1 Epochs and processes of industrialization

	I. Origins	II. Industrial revolution	III. Late industrialization	IV. Newly industrializing societies	V. Postindustrial society
1. Growth and transition	A. Protoindustrial-ization	V.			
2. Class formation		B. Culture and class struggle	W.		
3. Authority and enterprise			C. Control structures	X.	
4. Labor force			Y.	D. Proletarianization and the informal sector	
5. Contradiction and crisis	Z.				E. Deindustrial-ization

1760 with the steam engine and mechanized factory production. In the main, sociological theory has accepted this view, conceiving of the industrial revolution as a discontinuous "big bang" that reorganized modern society along the lines of a rational and technical division of labor. Despite his appreciation for the steady evolution of domestic industry, even Marx saw the late eighteenth century as a watershed.

Research over the last several decades questions the timing and discontinuity of industrial development. From the standpoint of technology alone, the Egyptians invented steam power and the Romans the water wheel. Roughly 50 years ago, Carus-Wilson (1941) argued that England's "first industrial revolution" took shape between the eleventh century and the thirteenth century with the advent of milled cloth production, and Nef (1934) marshalled evidence to show that the foundations of modern industry were created between 1540 and 1640, when machinery, coal consumption, large workshops, capital investment, and the domestic market all expanded dramatically. Braudel's (1984:556) review of this research concludes that "the English industrial revolution of the eighteenth century had already begun in the sixteenth century and was simply making progress by stages."

Convincing as these empirical demonstrations may have been, they did not attack the theories behind conventional interpretations (e.g. Cipolla 1980). Anomalies accumulated until the early 1970s when the term "protoindustrialization" (Mendels 1972) and its theoretical implications (Tilly & Tilly 1971) began to be developed. Tilly (1983:129) defines protoindustrialization as "the increase in manufacturing activity by means of the multiplication of very small producing units and small to medium accumulations of capital." The considerable significance of research on protoindustrialization lies in its demonstration that widespread industrial production existed in small towns and rural villages long before the mechanized urban factory; that the labor force was reorganized and proletarianized from 1500 onward; and that industry migrated between regions and urban and rural settings, creating an early pattern of uneven development.

The theoretical implications of protoindustrialization have been aimed at both liberal and Marxian interpretations. Tilly (1983:124) argues that it was the movement of capital, rather than the urbanization and mechanization of large-scale industry, that continuously reshaped industrial society: "The farther the inquiry goes, the more it appears that redeployment of capital and labor makes the big difference, and that mechanization is only one of several means by which that redeployment occurred in Europe." Stated differently—conventional theories are spuriously preoccupied with technology and the division of labor in manufacture, but these are simply particular industrial forms that appear in a longer series of changes explained by capital flows and the uses of labor.

Kriedte et al (1981) extended protoindustrialization to a more focused and controversial revision of Marxian theory in which urban industry of the middle ages and the social division of labor between town and countryside began to collapse under the weight of guild monopoly. "Merchant capital solved this problem by shifting industrial production from the town to the countryside where the process of differentiation and polarization had created a resource in the form of labor power which could easily be tapped by merchant capital. Thus, proto-industrialization, due to its timing, belonged to the second phase of the great transformation from feudalism to capitalism" (Kriedte et al 1981:7). Interregional trade and the world market figured significantly in the successful transition to protoindustrialization, leading these authors (1981:209–10) to stress the theoretical importance of a capitalist world system. Their conception, however, differs in many ways from that in the work of Wallerstein (1974).

Protoindustrialization has recently suffered a barrage of theoretical and factual criticism (e.g. Coleman 1983, Berg et al 1983). Strictly speaking, "proto" (meaning "original") industrialization dates from long before the sixteenth and seventeenth centuries although that period is the focus of this work. The theory behind protoindustrialization, it is alleged, does not really deal with the origins of large-scale industry because it fails to explain why protoindustrialization developed far in some places and collapsed in others (Coleman 1983). On closer examination, most of the work on protoindustrialization is based exclusively on cottage textile production; it does not fit the pattern of other early industrial experience in mining, mills, smelting, or for that matter, in anything but fabrics. Nevertheless, the value of this debate lies in its interpretive contributions which are concerned less with quaint descriptions of rural industry than with theoretical explanations: The concept of protoindustrialization undermines simplifications about the discontinuous character of industrialization that were based on foreshortened time horizons. Recent research demonstrates the value of closer connections between social theory and historical research and suggests new explanations for the longer and more winding course in industrialization.

Culture and Class Struggle

Twenty years ago, when the paradigms described previously dominated thinking about industrialization, the concept of social class was in disrepute. On one hand, theories of social differentiation rejected the term. "As industrialization advances, the skills of manual workers become more differentiated, and still more kinds of managers, technicians, and professionals are added to the productive organization . . . these distinctions cannot be meaningfully equated with 'class' " (Moore 1965:93). On the other hand, Marxian theory had made few advances beyond an economic interpretation of

class formation in which a self-conscious and acting proletariat appears only under the conditions of large-scale industry. Either there were no classes, or else the ones that existed did not act like classes.

No single work did more to reverse this situation than Thompson's (1963) *The Making of the English Working Class*. Thompson's singular achievement was to portray the working class as a historical actor rather than a descriptive category. Classes appear when people commence to struggle against exploitation, mainly but not exclusively in relations of production, and their struggles draw on cultural traditions as much as on political rights and economic opportunity. Thompson's approach has influenced a great many students of industry (e.g. Gutman 1966), just as it has provoked criticism, for example, of its blurred distinctions between action stemming from traditional community organization and from class as such (Calhoun 1982). In both cases, Thompson's work has become the pivot of recent research on industry and class formation.

The most important work in the Marxist tradition is John Foster's (1974) study of *Class Struggle and the Industrial Revolution* in three English towns. Foster explains the rise of revolutionary class consciousness in Oldham during the 1820s and its subsequent demise by 1850. In the first period Oldham workers attained a high degree of organization and awareness because people in various occupations were linked through neighborhood ties, and they intermarried at a high rate. Social solidarity enabled them to gain political control of town government and the police. Two other towns experienced the same working class grievances, but less occupational intermarriage, community cohesion, and unity. As the English economy passed through successive crises, Oldham's bourgeois liberalization and industrial reorganization created a labor aristocracy that combined to defeat working class militance. Although Foster's study ultimately supports a Leninist interpretation of worker cooptation, its analysis rests on a broadly sociological account of changes in the community, religion, politics, and the workplace.

Similar analytic strategies inform recent research aimed less at formulating neo-Marxian theory than at evaluating rival explanations of class formation and action. Aminzade (1984) compares Marxian and research mobilization theories of industrial protest in three French towns with varied economic structures. In the town dominated by mechanized factory production, grievances were keen, but the capacity for collective protest was undermined by workers' competition with available unskilled labor. Conversely, in towns with labor concentrated in household production or in handicrafts, protest was more frequent and vigorous owing to the capacity for action developed in workers through more autonomous community and class arrangements. Aminzade (1984:451) concludes that "contrary to Marx's expectations . . . there was a disjuncture between the conditions within which interest polariza-

tion was sharpest and the conditions under which class capacities were strongest." The incidence and form of protest are explained by the intersection of industrial pattern, national-level political changes, and the resolution of grievance-capacity conditions. Katznelson's (1985) study of class formation in the United States and England neatly parallels the previous examples. Here the issue is "state- and economy-centered explanations" of national differences in working class consciousness and political action. The argument reviews the labor aristocracy thesis and the spatial transformation of urban communities but concludes that key differences stem from the interplay of state and class. In the United States the vote was granted without struggle, and communities became the base for interclass political parties that appealed to nonclass solidarities. Unions were a separate locus for working class action. Public policy and union repression in England led to a fusion of all aspects of working-class action in locality-based organizations of workers with a deeply felt consciousness of class.

As in the case of protoindustrialization, controversy surrounds some of the recent work on class formation. Stedman-Jones (1983) complains of reductionism in the research exemplified by Foster and Aminzade, although this debate has more to do with the differences between historians and sociologists over the nature of explanation than with the accuracy of specific interpretations. In general, class is back in studies of industrialization, but class in a broader Weberian sense that incorporates political and market power. Recent research emphasizes different conditions of class formation and action—variation, in each case, that is affected by the interaction of industrial organization, community, interclass politics (e.g. reform or repression), technology (cf Cohen, 1985), and the state.

Control Structures

The modern sociological classic on control structures in enterprise is Bendix's (1956) *Work and Authority in Industry*. Bendix observes that a central problem for any industrial society is the development of both the techniques for managing large-scale coordinated enterprises and the ideologies that justify those methods. Management ideologies vary along many dimensions that Bendix seeks to encompass in a comparative study of countries classified by characteristics of early or late industrialization and laissez-faire or state-managed economies. The resulting analysis of England, Russia, the United States, and East Germany, however, focuses more on particular historically evolved ideologies than on cross-national generalizations. At the other extreme, Chandler's (1977, 1984:475) research on managerial capitalism in the United States, England, Germany, and Japan claims that each country arrived, by different routes, at a common pattern of integrated hierarchical organization. This convergence, moreover, occurred "at almost exactly the

same time" for each country—except Japan "only because it was later to industrialize." Chandler thus concluded that market forces such as transportation and competitive costs explain the singularly efficient result.

The Bendix-Chandler dispute is only a contemporary version of the debates that Marx and Weber conducted with liberal social and economic theorists. Recent research is beginning to provide some answers. Hamilton & Biggart (forthcoming) evaluate three theories of industrial organization and growth in a comparative study of Japan, South Korea, and Taiwan. Market and cultural explanations of enterprise growth prove useful, but the third approach based on authority relations in society supersedes the first two in some ways and proves uniquely fit for explaining the organizational form of industrial firms.

Complementing this work on the "top down" determinants of industrial organization are studies of authority in relation to people who are the objects of control. Recent research has moved beyond worker satisfaction and staff-line interaction to an analysis of production politics (Sabel 1982), notably in Burawoy's work. The central idea here is that a distinction must be drawn between authority relations that govern the labor process and "the *factory regime,* understood as the institutions that regulate and shape struggles in the workplace" (Burawoy 1984:250). Factory regimes help explain the Marxian paradox of how workers can transform the very structures that oppress them and how changing patterns of authority respond to workers' struggles. Comparative study of the United States, England, and Russia shows that distinctive factory regimes are explained by the interplay of market forces, labor process and reproduction, and the state. Production politics vary from Marx's portrait of coercive "market despotism" to "hegemonic" regimes in which consensus and coordination of the interests of labor and capital are promoted, particularly by state regulation and protections. A new form of "despotic-hegemonic" politics is emerging as enterprises enforce control through threats and acts of plant closure, runaway shops, and substitution of cheap labor (Burawoy 1983).

Research on industrial relations has been revitalized of late through reconceptualizing of authority in its broader social context and through evaluations of competing theories.

Proletarianization and the Informal Sector

Conventional theories are similar in one respect: Both project the experience of European industrialization on the present course of Third World development. Social differentiation envisions a progressive shift in the sectoral distribution of the labor force from primary agricultural activities to secondary manufacture and tertiary commerce and services. In contrast, uneven development theories describe the same general process as an ineluctable trend toward a fully proletarianized labor force. Recent research shows that both scenarios are mistaken.

Browning & Roberts (1980:89) have examined the sectoral distribution of labor in the long-industrialized countries of Europe, in late-industrializing North America, and in the recently industrializing Latin America. "Only Europe has followed the sequence by which employment is first greatest in agriculture, then in manufacturing, and finally in services. In both North America and Latin America employment in the services has always been greater than in manufacturing." The service economies of North and South America, moreover, are structurally distinct. The former is characterized by distributive services for a mass internal market, by high productivity, and by concentrated finance capital. The latter is distinguished by overurbanization, domination by foreign enterprise, and self-employment that subsidizes the modern capitalist sector. These distinct patterns require historical explanation, particularly in the Latin American case, based on analysis of the varied consequences of British and United States imperialism.

In a compact theoretical analysis of the Latin American case, Veltmeyer (1983) argues that labor is not in a state of transition between familiar, developed-nation patterns. Rather, the precise nature of peripheral underdevelopment is due to persistence of precapitalist relations, to surplus labor in the tertiary sector, a proliferation of petty production, and "active semiproletarianization." Although opinion is divided about whether this semiproletarianized labor force represents a different form of venerable casual labor (Bromley & Gerry 1979) or an etiologically distinct "informal sector" (Portes & Walton 1981), most observers agree that it encompasses the growing bulk of Third World labor.

Defined as paid work that is unregulated and unprotected by the state, the informal sector is growing (Portes & Benton 1984). Not merely in "marginal" self-employment such as street vending (Armstrong & McGee 1985), this growth is occurring across all branches of underdeveloped economies from middle class services to traditional industries such as construction to the most advanced multinational enterprises employing contract out workers or "disguised wage labor" (Birbeck 1978, Redclift & Mingione 1985).

With research expanding rapidly in this field, newly discovered patterns contribute to a lively theoretical dialogue. The prominent role of women workers in the informal economy raises questions about whether the divisions are essentially sectoral or gender-related and whether they recreate nineteenth-century patterns of female proletarianization (Armstrong & McGee 1985). The increase of informal work in the United States raises questions as to whether it is a phenomenon of peripheral or of international capitalism (Sassen-Koob 1982). Whatever the outcome of these issues, it is now clear that sectoral changes are distinctive for different periods of industrialization, that proletarianization is an uneven and dialectical process, and that the sequence Marx envisioned from formal to real subsumption of labor is reversible.

Deindustrialization

In a field where few broad generalizations are safely ventured, we can affirm that today's industrial world is a closely integrated international system. Industrialization relied on international trade from the beginning. Regional shifts in production sites and declines in manufacturing process were known in the periods of protoindustrialization (Tilly 1983). Apropos of current concern about the runaway shop, Landes (1969:116) reports that it was "in the late eighteenth century when, with the power loom not yet practicable and English weavers enjoying the unprecedented demand consequent on the introduction of machine spinning, it began to pay to ship British yarn to central Europe, there to be woven by peasants accustomed to a far lower standard of living than Englishmen." Thus, these days the existence of a world system is less novel than is its growing scale and integration in a pattern of global interdependence.

Operating through large transnational corporations, global industry produces a "new international division of labor" (Frobel et al 1980) that reserves research and development for the advanced nations and less skilled production work for cheap labor enclaves in underdeveloped areas. The "deindustrialization of America" (Bluestone & Harrison 1982) affects heavy industry and blue-collar workers. US production (e.g. steel) is a abandoned for foreign imports, and easily transported products (e.g. footwear, textiles, electronic components) are fabricated in export-oriented Third World sites or assembled in US runaway shops that reimport to the developed economies, often under programs of state support. The familiar consequences of deindustrialization, such as unemployment, displaced and degraded labor, income inequality, and declining unionization, all combine to produce major alterations in the class structures of the advanced societies (Portes & Walton 1981)—as well as the bloating of the tertiary sector in underdeveloped economies, discussed previously.

This, naturally, is a highly schematic picture of a complex process. The internationalization of capital varies with exchange rates, concessions from domestic labor, public policy (e.g. on social insurance, the environment, protectionism), and market demand—the largest US producer of computer chips, which was exporting jobs five years ago, recently closed its operations in Barbados and Puerto Rico due to a slack domestic market. The failure of economic recovery in many sectors of the US economy has generated a vocal protectionist movement aimed at reducing imports and preventing plant closures. Conversely, in some Third World countries a new alliance of national capital and labor may resist incursions by transnational capital (Singer 1985). For example, Brazil's new democratic government, needing to consolidate its domestic bases of support, is presently locked in a struggle with the US government and transnational corporations to preserve some branches of the Brazilian computer market for national firms (Evans 1985). Although de-

industrialization is immediately motivated by competition for markets and labor cost advantages, its concrete expression is ultimately fashioned in a many-sided political struggle.

In summary, it is unwise to project a unilinear trend toward a de-industrialized core and a worldwide recourse to cheap labor on the periphery of the world system. A more realistic expectation is that there will be growing international political conflict around these issues, conflict that may be resolved in a variety of ways. This seems to be the thrust of crisis theories that have profited from the failures of economistic analyses and replaced such analyses with interpretations of how economic contradictions become social crises (O'Connor 1984). At all events, two conclusions are inescapable: One, the advanced industrial societies face a period of continuing and traumatic economic restructuring, and two, far from seeing any post-industrial society, we are witnessing the consolidation of a fully industrialized global economy (Mandel 1975).

CONCLUSION

Sociological understanding of industrialization has advanced greatly in the last two decades under the impact of rapid social change and a new style of research that combines theory, historical inquiry, and a global perspective. As for the paradigms that once guided research—social differentiation has been eclipsed except as a metaphor describing subprocesses, and uneven development has been transformed from an imperfect insight to a broader and empirically more refined framework. From the legacies of these alternatives, a new interpretation of the political economy of industrialization is taking shape. Although this is not yet a coherent theory, it most certainly embodies the elements that will organize one.

A fittingly open-ended conclusion can do no better than to draw these lessons: 1. Industrialization is a continuous process driven by wit and contradiction to successively distinct forms of organization, rather than a revolutionary event that is recapitulated over time in separate societies that put together the necessary prerequisites. 2. Important aspects of this process that relate to technological change and market forces are subsumed in sociological explanations of economic organization based on the social division of labor, group formation, classes, authority, the conditions of work, and social protest. 3. The key institutional mediation of diverse social factors lies with community and culture. 4. The state is an enveloping influence shaping both the organization of classes and communities and the conditions of industrial development. 5. The international division of labor and global industrial system affect decisively the opportunity and organization of local industry. 6. Research and theoretical refinement depend on understanding the patterned

interaction of these forces over time. However demanding a complete elaboration of each point may be, together they suggest the substantial progress realized in recent work.

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