SOCIAL CHANGE IN THE INDUSTRIAL REVOLUTION

SMELSER

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An Application of Theory to the Lancashire Cotton Industry 1770–1840

by

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PREFACE

The Society of Fellows of Harvard University ranks high among those who have facilitated my progress in this study. Their generous purse not only sent me abroad for research in 1956–7, but also, during my term as Junior Fellow between 1955 and 1958, relieved me of all necessity to earn a living. Less tangible, but more important, I feel, was the Society's general atmosphere, which breeds a faith in free and imaginative inquiry.

Those who read these pages will be aware of the gratitude which I now record for Talcott Parsons. Over a number of years—as teacher, critic, and collaborator—he contributed in innumerable ways to this study, both before its inception and during its development. Professor W. W. Rostow of the Massachusetts Institute of Technology offered particularly clear and helpful direction in the early stages of research and in the later revisions. To him I owe thanks for the advice to limit the study to a single industry. In somewhat extended conversations, both at Harvard and in London, with H. L. Beales, formerly of the London School of Economics, I gained many substantive suggestions and a mountain of source references. I should like also to include conversations, helpful in a variety of ways, with the following men: E. J. Hobsbawm of Birkbeck College, London; K. E. Berrill of St. Catharine's College, Cambridge; P. Mathias of Queens' College, Cambridge; M. M. Postan, Professor of Economic History, Cambridge; W. H. Chaloner, H. A. F. Turner, A. E. Musson, and A. B. L. Rodgers, of Manchester University. Bernard P. Cohen, now at Stanford University, reviewed some of the statistics in the appendices. More generally, I should like to extend long-overdue thanks to my tutors at Oxford, G. D. N. Worswick and Kenneth Tite of Magdalen College. Between 1952 and 1954, when I was their pupil, they imparted a great sense of curiosity over many issues in British social and economic history —a curiosity which extended through this study and which continues.

Quiet though indispensable contributors to the long research were the staffs of several libraries: the British Museum; the British Library of Political and Economic Science; the Manchester Central Library; Chetham's Library, Manchester; the Manchester University Library; the University of London Library, Senate House, especially the Goldsmith's Library of Economic Literature; and Widener Library, Harvard University. I harbour a special attachment to the reading-

rooms of the British Museum, where I spent many months huddled over its endless supply of invaluable books, pamphlets, and documents. Its halls of treasures and its Bloomsbury environs also afforded excellent recess from study.

A special kind of thanks is due to the *fondateurs* of *Rustique Olivette*, especially Daniel Guérin. *Rustique Olivette* is a villa in the hills above La Ciotat, a maritime port on the French Mediterranean. Its purpose is to harbour—temporarily—wayward scholars, artists, and intellectuals. In the spring of 1957 I composed a draft of the last half of the manuscript in this villa. It was a magnificent experience. If my interpretation of the social conditions of the British working classes is perhaps less dismal than others', possibly it may be attributed, in the end, to the sun and sea of La Ciotat.

My wife, Helen, listened and criticized patiently throughout; her readiness to master the drier bits of the history of the cotton industry went, in my opinion, well beyond the call. Toward the end of the last revisions she dissected, with me, each sentence and phrase of the manuscript. This was immensely helpful, since my editorial imagination had long since been dulled. And finally, our first son, Eric, obliged by making his appearance just five days before an earlier version of this book was submitted to Harvard University as a Ph.D. dissertation. His birth added an air of creativity to the event. I shall always be grateful for his sense of timing.

NEIL SMELSER

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CHAPTER I

INTRODUCTION

When comparing a society with its past or with another society, we often employ a dichotomy such as "advanced vs. backward," "developed vs. underdeveloped," "civilized vs. uncivilized," or "complex vs. simple." Sometimes these words yield too little information, because they claim simply that one society is superior to another. Sometimes they yield too much, for terms like "advanced" shroud a galaxy of vague connotations. Hence to use such words may generate conflicts of pride and conflicts of meaning, both of which subvert intelligent discourse.

The dichotomies are, however, not completely useless. Common to all are the dimensions of *complexity* and *differentiation.* In other words, an "advanced" or "developed" society possesses a complex organization of differentiated social and cultural components. To illustrate, a religion becomes a religious tradition only after it shakes off its undifferentiated tribal elements and develops a complex, independent organization. A military machine is more developed than spontaneous warfare because it operates under specific, explicit, and sometimes autonomous rules. Bureaucratic administration is more advanced than a household staff not only because it is more complex but also because it is less mingled with personal loyalties.[1] A highly developed economy has a complexity of organization and a differentiation of units which do not characterize underdeveloped forms.[2] Political behaviour "advances" when it is carried on within political institutions free from nepotism, tribal loyalties, and bald economic interests. In short, one element in "growth," "advancement," and "civilization" is that the social structures in question become *more differentiated* from each other.

[1] M. Weber, "Bureaucracy," in *From Max Weber: Essays in Sociology* (London, 1947), pp. 198–9.

[2] These elements are implied in Adam Smith's view of an economy. Book I of *The Wealth of Nations* (New York, 1937) is entitled: "Of the Causes of Improvement in the Productive Powers of Labour . . . ," or we might say, of the causes of economic growth. Chapter I, "Of the Division of Labour," and Chapter III, "That the Division of Labour is limited by the Extent of the Market," contain the twin ideas of complexity and differentiation from the market.

This implicit concept underlies much of our discourse about social development. We seldom ask, however, whether the *very process* of passing from a less differentiated to a more differentiated social structure possesses definite regularities, and whether the sequence itself produces phenomena which can be analysed systematically. It is my assertion that such regularities do exist, and can be extracted from societies in flux.

In the following study I shall analyse several sequences of differentiation. Above all I shall be attempting to apply social theory to history. Such an analysis naturally calls for two components: (1) a segment of social theory; and (2) an empirical instance of change. For the first I have selected a model of social change from a developing "general theory of action"; for the second I have chosen the British industrial revolution between 1770 and 1840. From this large revolution I have isolated the growth of the cotton industry and the transformation of the family structure of its working classes. Let us sketch the model and the historical processes in turn.

The model of structural differentiation is an abstract theory of change. When *one* social role or organization becomes archaic under changing historical circumstances, it differentiates by a *definite and specific sequence of events* into *two or more* roles or organizations which function more effectively in the new historical circumstances. The new social units are structurally distinct from each other, but taken together are functionally equivalent to the original unit. The differentiation of an economy's distribution system into "retail" and "wholesale" is an example. These branches of distribution differ, of course, but together they fulfil the same function as a more primitive distribution system. Another example is the differentiation of courtship from kinship. In a system of classificatory marriage (e.g., cross-cousin), the basis for marriage is simply extended kinship. When, on the other hand, the basis for marriage is personal acquaintance outside the family circle, courtship has become *differentiated* from the structure of kinship. Any sequence of differentiation is set in motion by specific disequilibrating conditions. Initially this disequilibrium gives rise to symptoms of social disturbance which must be brought into line later by mechanisms of social control. Only then do specific ideas, suggestions, and attempts emerge to produce the more differentiated social units. We shall elaborate this statement presently; for the moment let us apply it sketchily to an industrial structure and to a family economy.

Industrial differentiation implies that under certain market, value, and other conditions, the existing industrial structure becomes inadequate to meet productive requirements. A sequence enters its

first stage when elements in the population express dissatisfaction with industrial productivity. This dissatisfaction appears in the form of complaints concerning the misuse of resources or the faulty performance of economic roles which control these resources, or both. In either case the dissatisfaction is legitimized by reference to the dominant value-system of the time. The immediate responses to dissatisfaction are undirected or misdirected symptoms of disturbance. Initially these disturbances are "brought into line" by a series of holding operations which prevent the outbursts from reaching explosive proportions. Simultaneously there is a reiteration of established values and an encouragement of ideas which promise to carry the implications of these values into practice. These ideas are implemented by inventions and experiments with methods of production. Finally, entrepreneurs turn these suggestions into action to overhaul the productive system. If successful, the entrepreneurial attempts produce a new industrial structure and an extraordinary growth of production, capitalization, and profits.

The family economy—those organized roles which govern production and consumption in the family—is a social structure distinct from any industry, but the principles regulating its reorganization are identical. The family may become, under specific pressures, inadequate for performing its defined functions. Dissatisfaction occurs when it is felt either that performance of roles or utilization of resources falls short of expectations. The symptoms of disturbance resulting from these pressures are first handled by mechanisms of social control. Gradually, as the energy is harnessed, it is diverted to the more positive tasks of legitimizing and specifying ideas for social action, and transforming these ideas into social experiments. If successful, these experiments produce one or more new social units. In this study we shall apply the model of structural differentiation to several changes in the family and community life of the British working classes in the early nineteenth century; among these changes were the reorganization of the economic roles of the family, the consolidation of friendly societies, the rise of savings banks and co-operative stores, and the evolution of trade unions.

We might note two general implications of this model at the outset: (1) It is applicable to *many* types of social structure. Separate models are not required for analysing changes in the economy, the family, the class system, etc. Even though unique conditions naturally govern the behaviour of different social units, the growth *pattern* of each should follow the same model. (2) Because structural differentiation is a *sequence*, its components appear in a temporal relationship to each other. For instance, symptoms of disturbance

erupt when the obsolescence of the old structure is apparent but before the mobilization of resources to overhaul this structure begins. These disturbances, moreover, bear a symbolic relationship to the specific points of obsolescence; for these reasons social disturbances are not simply random outbursts. In this study I shall analyse several symptoms of disturbance—pleas for economic protection, strikes, attempts to restrict factory hours, and Utopian movements. By employing the model of structural differentiation it is possible to shed light on both the content and timing of these eruptions.

Why choose the cotton industry and the family economy of its working classes? First, because Britain was the cradle of modern industrialism and because cotton was, in a certain sense, the cradle of British industrialism.[1] Second, the changes in the cotton industry were rapid and dramatic between 1770 and 1840.[2] What is true of the industry is true of the family economy of its workers. In the late eighteenth and early nineteenth centuries, child, female, and male labour were reorganized dramatically, thus occasioning a thorough modification of the family structure. In addition, this period saw the creation of a number of social units—trade unions, co-operative stores, savings banks, etc.—which evolved as cushions for the family in its new industrial environment.

The final reason for choosing this period is a practical one. Historians have combed over the British industrial revolution from many points of view. This availability of historical research is necessary because of the broad scope of the present study. Though I have utilized many primary sources, I have relied more heavily on secondary sources than is customary in a traditional historical study.

Why, one might ask, if the economic and social history of the period is so familiar, should we attempt to improve the history of Baines, Mantoux, Marx, the Webbs, the Hammonds, Cole, and others? Why review the industrial and social revolution in cotton from the standpoint of a theory of structural differentiation?

[1] W. W. Rostow, "The Take-off into Self-sustained Growth," *Economic Journal*, LXVI (1956), pp. 44–5.

[2] The industry had begun its rapid growth many decades before the industrial revolution. Below, pp. 53–60. Though international competition became apparent in the 1830's and intensified thereafter, the British cotton industry continued to grow rapidly throughout the century, falling only after its peak in 1913. Even the industry's gloomiest prophets did not date its decline before the 1880's. G. von Schulze-Gaevernitz, *The Cotton Trade in England and on the Continent* (London, 1895), pp. 48–9; G. Armitage, *The Lancashire Cotton Industry from the Great Inventions to the Great Disasters* (Manchester, 1951); Bonami (pseud.), *The Doom of the Cotton Trade and the Fall of the Factory System* (Manchester, 1896), p. 5.

Each time one looks to the past he is guided by certain assumptions or presumptions about what should be lifted from the chronicle of recorded history. Such assumptions are necessary to select from history's endless facts. They are ideas, concepts, abstractions, or notions which permit the observer to reconstruct meaningful relationships among the facts which interest him. No matter how avid the historian's concern for "facts," he must use such assumptions. Sometimes these are elaborately defined and self-consciously applied, as in Marx' *Capital*; sometimes they are more implicit, as in the work of the Hammonds or Cole. The value of *re*considering historical phenomena is to bring *new* ideas to bear on history. When, for instance, the concept of bureaucracy appears as an important element in modern social thought, it is important to consider the development of bureaucracy, even though historians may hitherto have neglected its significance. Similarly, when theories of social change elicit new historical relationships, it is important to reconsider history in the light of these theories.

The various approaches to history are not, however, always independent of each other. Sometimes they "compete" because they purport to explain the same facts. Thus the Marxist history of capitalism differs from *laissez-faire* history, even though both attempt to assign meaning to the same historical phenomena. Which explains them better? By comparing several approaches to a historical period, we might judge their relative analytical value, and hence generate criteria for preferring one or the other as an explanation for the facts in question. The grounds for preference concern the number and kinds of omissions, inconsistencies, distortions, and limitations which a given scheme implies. Hence a second value in applying a new interpretive device to history is to compare and contrast its explanatory value with that of existing approaches.

There is a third, more special reason for applying the model of structural differentiation. In the development of the model there have been indications that its applicability is exceedingly wide, e.g., to fields as diverse as economic development, small groups, and psychological processes of learning and socialization.[1] To apply it rigorously to another empirical field, therefore, provides evidence as to the generalizability of this model.

For these reasons I shall devote a later chapter to a critical examination of several approaches to the social history of the early nineteenth century. If I may preview my own analysis a little, I shall

[1] See T. Parsons, R. F. Bales *et al.*, *Family, Socialization, and Interaction Process* (Glencoe, Ill., 1955); Parsons and N. J. Smelser, *Economy and Society* (London and Glencoe, Ill., 1956).

be less critical of the purely *industrial* aspects of the history of cotton. The model incorporates the usual elements of an industrial history—invention, innovation, reorganization, capitalization and production—in a very systematic way. In addition, however, it is necessary to consider systematically several "non-industrial" aspects of the industrial change, such as the burst of Nonconformist religious values in the eighteenth century, the rise of the Society of Arts and the Patent Office, the movements for protection and favouritism, etc.

Our analysis of the *social* history of this period will be both more novel and more controversial. The model of structural differentiation is novel because it deviates very radically from conventional interpretations of the social history of the period. Furthermore, because social historians have tended to "take sides" in the highly charged atmosphere of working-class misery, trade unionism, violence, and factory agitation, their approaches leave a residue of confusion and controversy over the correct interpretation of social conditions and movements. I shall therefore supplement this study with a brief critical analysis of three interpretations of social history in the industrial revolution: (1) Marx' *Capital*, in which many social phenomena are traced to the system of capitalist production and the resultant conflict between classes; (2) the work of the British Socialist historians, who attribute the rise of many social movements to the oppression and misery of the working classes, and (3) the work of a historian who recently has revived some of the assumptions of the *laissez-faire* ideology. I shall ask whether these approaches conform to the historical facts and whether their concepts have wide explanatory scope.

CHAPTER II

SOME EMPTY THEORETICAL BOXES

One of the most famous and fruitful—yet in one respect futile—controversies ever to appear in the economic journals was a dispute over the respective roles of theory and fact between two giants of the tradition of economics, A. C. Pigou and J. H. Clapham.[1] The controversy began when the latter launched an attack on economic theory. He complained specifically about the contemporary version of diminishing return, constant return, and increasing return industries. He preferred to discard such concepts because, first, "the Laws of Returns have never been attached to specific industries . . . the boxes are, in fact, empty . . . we do not, for instance, at this moment know under what conditions of returns coal or boots are being produced."[2] Even if filled with facts, such terms are not translatable into useful directives for public policy. And finally, any hope one might entertain actually to fill the boxes and thereby to establish empirical conclusions is "not very encouraging."[3] The empty boxes of economic theory are, in sum, both unfilled and useless if filled; these weaknesses, however, are unimportant in the end because the boxes are virtually unfillable.

Pigou's counter-offensive was likewise multi-pronged. General categories have proved useful elsewhere, e.g., in mathematics. Indeed, to speak in general terms at all presupposes some kind of empty box; a term such as "commodities," and nothing less general, is necessary to analyse certain characteristics of hats *and* gold watches *and* onions at the same time. Since the time of Adam Smith theorists have employed such terms to "disentangle and analyse the causes by which the values of different things are determined."[4]

I shall discuss neither the particular concepts of diminishing, increasing, and constant returns, nor the question of theory's

[1] *Economic Journal*, XXXII (1922), pp. 305–14 and 458–65. Reprinted in American Economic Association, *Readings in Price Theory* (London, 1953), pp. 119–39.

[2] AEA, *Readings in Price Theory*, p. 127.

[3] *Ibid.*, p. 128.

[4] *Ibid.*, p. 134.

applicability to policy. On methodological grounds, however, one must join Pigou. Theory, if it is to be theory, must include a number of empty boxes, i.e., categories which refer potentially to a wide range of facts. These categories maintain consistent logical relations among themselves; they possess a stable *structure*. Moreover, definite yet abstract propositions govern the *interaction* among the categories under conditions of change. Finally, to fill the boxes correctly, one must isolate empirical instances to accept or reject the logical relationships among the categories.

Following this logic, we may speak of two sorts of propositions, analytical and empirical. The first are "if . . . then" statements about the behaviour of the empty boxes. Empirical propositions, on the other hand, fill the boxes by specifying appropriate empirical areas in which the analytical relationships should hold. Empirical propositions are "tested," naturally, by referring to the empirical data which the propositions themselves call into question.[1] To state the laws of gravity in abstract formulas, for example, would be to create analytical propositions. To predict the course of planets, the speed of falling objects, and the sequence of tides would be to generate several sets of empirical propositions. The latter then would be tested by reference to astronomical, experimental, and natural data.

The controversy between Clapham and Pigou is futile, therefore, because it is impossible to discuss whether empty boxes are desirable or undesirable in theory. Theory cannot exist without them. For any *specific* set of categories Clapham's objections of "unfilled," "useless if filled," and "unfillable" may hold. This, however, is not the issue of theory vs. no theory, but of good vs. bad theory. To say that empty boxes are in principle unfillable is an illegitimate extrapolation based on objections to particular bad theories. This results in a general methodological position which rules out scientific explanation.

The controversy—and the reason for its futile aspect—suggest an approach to the present study. Application of theory might proceed by three steps: (1) to generate or assemble some empty theoretical boxes and to formulate analytical propositions; (2) to fill the boxes in several ways and thereby generate some empirical propositions; (3) to examine the relevant empirical phenomena themselves as a limited "test" for the empirical propositions.

Following this outline, I shall present, in this chapter, some of the segments of a general theory of action as it has developed in the past

[1] J. O. Wisdom, *Foundations of Inference in Natural Science* (London, 1952), pp. 46–59.

several years.[1] Elsewhere these segments have been applied to the behaviour of small groups, the socialization of the child, and the development of economic institutions. While this theory of action is still relatively undeveloped methodologically, it is presumed that it is applicable to these and many more empirical areas. In this study I shall develop a further "case study" of its applicability.

For the moment I shall treat these theoretical segments as empty boxes, which possess a structure and interact with each other, but which do not refer to any *particular* human action. Consequently this chapter contains a minimum of empirical illustration. I shall also relegate some of the more elaborate theoretical refinements to appendices and to footnotes marked by asterisks (*) throughout the study. For a general appreciation of this research it is not necessary for the reader to pursue all these refinements. A full grasp of the technical arguments requires, however, a careful reading of all the theoretical material.

In the next chapter I shall fill these boxes by defining an industry—using cotton textiles in Great Britain—in terms of the general categories, and simultaneously translate the analytical propositions into empirical statements about industrial change. In Chapters IV–VII, I shall investigate the industrial developments in cotton textiles between the 1770's and the 1840's in Britain, in order to examine the workability of the propositions.

In Chapter VIII, I shall *re*fill the empty boxes and restate the abstract propositions with reference to the family economy. Naturally a family differs from an industry empirically; they are distinct institutionalized sub-systems and cannot be reduced to each other. The *pattern* of structural differentiation governing both, however, is identical. Having outlined these principles of change for the family economy, I shall turn to an analysis of its historical development during the industrial revolution (Chapters IX–XIII). In particular I shall analyse its changing division of labour, the trade union, the friendly society, the savings bank, and the co-operative society. In part I shall be reinterpreting material from economic and social history by means of a body of specifically sociological theory which has seldom commanded the attention of historians or economists.

[1] Particularly in T. Parsons and E. A. Shils (eds.), *Toward a General Theory of Action* (Cambridge, Mass., 1951); Parsons, *The Social System* (Glencoe, Ill., 1951); Parsons, R. F. Bales and Shils, *Working Papers in the Theory of Action* (Glencoe, Ill., 1953); Parsons, Bales, *et al.*, *Family, Socialization and Interaction Process*; and Parsons and Smelser, *Economy and Society*. Since the main purpose of this chapter is not to build theory but to collect and arrange already-formulated elements, I shall not discuss these elements in detail. Ample reference will be made to the works of action theory, however.