

THE SOCIAL  
PROBLEMS  
OF AN  
INDUSTRIAL  
CIVILIZATION



# THE SOCIAL PROBLEMS OF AN INDUSTRIAL CIVILIZATION

With an Appendix on the Political Problem

by  
ELTON MAYO .

*foreword by*  
J. H. SMITH



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*This book is dedicated to*

M. L. PUTNAM  
H. A. WRIGHT  
W. J. DICKSON  
A. C. MOORE  
D. D. DAVISSON  
H. HIBARGER

*the team that worked through the Hawthorne  
experiment to its interesting conclusion.  
They will understand if I add the name of*

GEORGE A. PENNOCK

## FOREWORD TO THE 1975 EDITION

### THE SIGNIFICANCE OF ELTON MAYO

ELTON MAYO's *Social Problems of an Industrial Civilization* was published on the eve of his retirement, after twenty-one years as Professor of Industrial Research at the Harvard Business School. His reputation was then at its peak. An article in *Fortune* ranked Mayo as a modern social thinker with Thorstein Veblen and John Dewey; it further hailed him as an academic whose views directly challenged the basic assumptions of the practical world of industry.<sup>1</sup>

Scientist and practical clinician, Mayo speaks with a rare authority that has commanded attention in factories as well as Universities. His erudition extends through psychology, sociology, physiology, medicine, and economics, and his experience comes from a lifelong, firsthand study of industry. . . . Mayo's view gives promise of exerting through the field of business administration a significant influence on the future relations of U.S. management and labor. Indeed, many believe that Mayo holds the key to industrial peace.

Among academics, however, there was already more than one view of his contribution and the first of a stream of critical articles had already appeared.<sup>2</sup> Mayo's critics soon placed him in more ambiguous company. Clark Kerr, also writing in *Fortune*, saw Mayo's solution to the problems of industrial conflict as too narrow and monolithic in its implications, threatening the freedom of the worker-citizen: society must devise a pluralist framework for the accommodation of conflict, as against "the all-embracing party of the Communists and the Fascists, the all-absorbing corporation of Elton Mayo, the all-absorbing union of Frank Tannenbaum, the all-absorbing church of T. S. Eliot."<sup>3</sup>

<sup>1</sup> "The Fruitful Errors of Elton Mayo", *Fortune*, Vol. 34, November 1946, pp. 181-3 et seq.

<sup>2</sup> Of these, the most significant was to be R. Bendix and L. H. Fisher, "The Perspectives of Elton Mayo", *Review of Economics and Statistics*, Vol. 31, 1949, pp. 313-21.

<sup>3</sup> Clark Kerr, "Whatever Became of the Independent Spirit?", *Fortune*, Vol. 48, July 1953, pp. 110-11 et seq.

A quarter of a century after his death, Mayo's name is still remembered and he himself is still the centre of controversy. The vigour of the criticism directed against him demonstrates the importance of his views for the social scientist concerned with industrial behaviour. By the 1950s, the stream of criticism had swelled to a flood. Writing towards the end of the decade, Landsberger was moved to remark "that among a large number of sociologists and economists, 'taking a shot at Mayo'—and at human relations—seems to be a favoured practice of several years' standing."<sup>1</sup>

Since then there has been some reduction in frequency, but none in intensity. Mayo's name has become synonymous with a narrow (and, to some, ethically questionable) view of social relations in industry; so much so that the terms "Mayoite" and "Mayoism" have passed into the pejorative language of social science. A recent appraisal of research needs in industrial relations in Britain tartly reproduces what is now the received wisdom concerning Mayo's contribution and outlook.<sup>2</sup>

From the middle of the 1950s, industrial sociologists and psychologists began to show that they could contribute to industrial relations. "Human relations" had a considerable following among British practitioners of industrial relations, but academics were initially sceptical. For especially as expounded by such writers as Elton Mayo, human relations concentrated on the primary work group and labour-management cooperation, ignoring or belittling most of the topics in which students of industrial relations were interested.

All of which suggests that Mayo's work could only be of limited interest today; of little value perhaps except as a paradigm offering a rather threadbare interpretation of the social needs of the industrial worker. Viewed in this way, the best that might be said for him is that Mayo's critics have found an analysis of his shortcomings an essential stimulus in clarifying their own views about the proper scope of industrial sociology.

There is of course much more than that to Mayo as the reader of this volume will discover. Indeed, some of the features of Mayo's writings which so upset his posthumous critics—his

<sup>1</sup> Henry A. Landsberger, *Hawthorne Revisited* (Cornell University Press, Ithaca, New York, 1958), pp. 28-9.

<sup>2</sup> G. S. Bain and H. A. Clegg, "A Strategy For Industrial Relations Research in Great Britain", *British Journal of Industrial Relations*, Vol. XII, No. 1, March 1974, p. 99.



suspicion of state power, his distrust of politicians, his scepticism about the faith in formal procedures designed to solve problems of human co-operation—look very different in the 1970s. One is reminded of the fluctuating reputation of Herbert Spencer, whose arguments and concepts continue to enrich present day sociology.<sup>1</sup> The comparison should not be pressed too far—Mayo cannot really be put in the same class as Spencer, except possibly on grounds of intellectual arrogance—but there are some interesting similarities. Like Spencer, Mayo is a representative product of his age. Spencer fashioned the essential vocabulary of sociology and social anthropology: Mayo, without ever himself using the term “industrial sociology” defined its essential point of view in an unmistakeable and (his critics notwithstanding) inescapable form. Amid the pessimisms of the post-welfare society some of Mayo’s ideas—like Spencer’s—are beginning to be in fashion again: while his views on the methods of social science and their limitations are unconsciously shared by many of those who may have assumed, on ideological grounds, that he is a writer of little interest.

*The Social Problems of an Industrial Civilization* is not Mayo’s most satisfactory book. It is clear that he had misgivings about writing it and that he was not very pleased with its final form. It was written under the stress of war and of worries about his family and about himself. Nevertheless it tells us a great deal about the man and what he did. In particular, it gives us Mayo’s own version of the intellectual and social context in which he made his name and in which he came to exert a singular influence. It is also a record of the development of a point of view without which the subsequent histories of sociology and of management thought and education would inevitably have been different.

## MAYO’S LIFE AND WORK

### *Early Life and Education*

There is as yet no reliable biography of Mayo, but even an incomplete account of his life shows that his career and interests could at no time be classed either as settled or conventional.<sup>2</sup> He was born George Elton Mayo in Adelaide in December 1880.

<sup>1</sup> See the introduction by Donald MacRae (ed.), *Herbert Spencer: The Man Versus The State* (Penguin Books, Harmondsworth, 1969), pp. 8–12.

<sup>2</sup> I am indebted for much of the personal information used in this section to the generous help of Patricia Elton Mayo and Professor George F. F. Lombard.

The Mayos were well-established in Australia, a comfortably-off professional family. Mayo's father, George Gibbes Mayo, was an engineer. There were seven children, of whom Mayo himself was the second-born. His sister Helen trained as a doctor and by the turn of the century Mayo himself was studying medicine in Britain.

The details of Mayo's academic career up to that time have yet to be fully established. From 1896 to 1898 he was at St Peter's College, Adelaide and he was a student at the University there in 1899. Following this, he went to Edinburgh University, but left without completing the course, apparently impatient of the routine requirements of a Scottish medical education. Despite a subsequent interest in the personal difficulties of students, Mayo does not refer to this phase of his life in his writings, although he was fond of using anecdotes involving himself to illustrate an argument (usually of a clinical nature). The next year or two (1903-4) was an unsettled period. He was first in London, where by his own account he did voluntary work at the London Working Men's College.<sup>1</sup> He then tried his luck in West Africa in the Ashanti goldfields but returned to London now apparently hoping to go to Canada. Instead he was restored to the family fold in Australia: it was to be more than seventeen years before he finally landed in North America.

Once more in Adelaide, he went back to the University and became a student of psychology with Sir William Mitchell. The attraction for Mayo, as reported later by one of his students, was that "the professor could answer his questions."<sup>2</sup> In 1910 he gained his B.A. with honours in philosophy, winning the Murray Scholarship as the best student in his class.

### *University of Queensland*

Mayo's career as a university teacher began in 1911, with his appointment at the University of Queensland at lecturer in Logic, Ethics and Psychology. He built up a small but vigorous school of Mental and Moral Philosophy, during the first three years of which he appears to have been responsible for all of its teaching, including that on economic theory.<sup>3</sup>

<sup>1</sup> Elton Mayo, *The Psychology of Pierre Janet* (Routledge & Kegan Paul, London, 1951), pp. 9-10 (hereafter referred to as Mayo, *Janet*).

<sup>2</sup> W. M. Kyle, obituary note in the *University of Queensland Gazette*, No. 15, Brisbane, December 1949.

<sup>3</sup> *Ibid.*

Mayo established a reputation as an outstanding lecturer, both inside and outside the university. He took a particular interest in trade union education and was a keen critic of the reluctance of Australian universities to develop the social sciences.<sup>1</sup>

A principal influence on Mayo's approach to psychology during this period was the work of the French psychologist, Pierre Janet. Janet's work on hysteria and obsession stimulated and guided Mayo's own teaching and research. This interest found practical expression in the psychotherapeutic treatment of shell-shocked soldiers returning from the First World War. This work had a profound and lasting impression on Mayo's approach to the problems of the individual in industrial society; it also marked the beginning of some thirty years as an active practitioner with individual patients. Clinical psychology in Queensland seems to have developed directly as a result of this pioneering work (psychiatry as such barely existed in Australia) since it led directly to a grant from the British Red Cross Society to finance a Research Chair in Medical Psychology at the University.

Mayo meantime had himself been appointed Professor of Philosophy. He was beginning to focus his attention on the problems of monotonous and repetitive tasks in industry. Work published by him at about this time shows that he was already familiar with industrial questions.<sup>2</sup> By the early 1920s Mayo seems to have decided that he could make a distinctive contribution through the investigation of industrial problems, especially the adaptation of the normal individual to industry.

### *Arrival in the United States*

He was also keener than ever to visit the United States. Mayo was dissatisfied with the opportunities for research and for academic development in Australia and took up a Laura Spelman Rockefeller Fellowship, arriving in San Francisco in August 1922. Mayo was encouraged by his reception, but his sense of frustration

<sup>1</sup> Ibid. Elton Mayo, "The Australian Political Consciousness", in Meredith Atkinson (ed.), *Australia: Economic and Political Studies* (Macmillan & Co., Melbourne, 1920), pp. 142-4.

<sup>2</sup> Despite the later criticisms that Mayo was ignorant of or indifferent to existing industrial studies, especially of trade union questions, he showed a close familiarity with the institutions of Australian management-labour relations. See his chapter in Meredith Atkinson (ed.), *op. cit.*, pp. 126-44. In his chief work in this period, *Democracy and Freedom* (Macmillan, Melbourne, 1919), Mayo is closely concerned with the problem of realizing political ideals in the context of an industrial society committed to continuous change and adaption.

with Australia was deepened by the refusal of the University of Queensland to grant six months' extension of his leave. He had left his wife and two young children behind; it was to be over a year before they were with him again in America.<sup>1</sup> By then he had resigned from his Chair at Queensland. Mayo never returned to Australia.

His first academic post was a Rockefeller Fellowship, held at the Wharton School of Finance and Commerce at the University of Pennsylvania; his first empirical investigation in America was concerned with the causes of high labour turnover in the mule spinning department of a textile mill near Philadelphia. Mayo subsequently used the course of this study to illustrate the shortcomings of conventional approaches, including his own, to questions of worker behaviour. At the same time it enabled him to demonstrate to his own satisfaction that studies involving experimental changes in working conditions were both feasible and worthwhile.<sup>2</sup>

During this period, Mayo wrote a number of articles for the general reader, including some for *Harper's Magazine*.<sup>3</sup> It was these that first aroused the interest of Dean Wallace B. Donham of the Harvard University Graduate School of Business Administration, as a result of which Mayo was invited to Harvard as an associate professor of industrial research in the Business School.

### *Harvard and Hawthorne*

Mayo took up his post at Harvard in 1926. He was to remain there for twenty-one years, becoming one of the best-known (and one of the most controversial) members of the University. Despite this, his precise role in the development of the Business School and of its research programme is difficult to evaluate.

In particular, the famous Hawthorne Experiments, the set pieces of his two best-known books, and with which his name is always linked, were neither designed nor directed by Mayo.<sup>4</sup> A

<sup>1</sup> Mayo had married Dorothea McConnel in 1913. They had two daughters Patricia (b.1915) and Gael (b.1921).

<sup>2</sup> Mayo's first account of this study was given in an article "Reverie and Industrial Fatigue", *Personnel Journal*, Vol. III, No. 8, December 1924, pp. 273-81. See also Chapter III of this volume.

<sup>3</sup> An example is "Should Marriage be Monotonous?", *Harper's Magazine*, September 1925. The answer was in the opening sentence: "Of course it should."

<sup>4</sup> Elton Mayo, *The Human Problems of an Industrial Civilization* (Macmillan, New York, 1933), Elton Mayo, *The Social Problems of an Industrial Civilization* (Routledge & Kegan Paul, London, 1949), hereafter referred to as Mayo, *Human Problems* and Mayo, *Social Problems*.

number of popular accounts have described the experiments as his personal conception and direct responsibility, but Mayo never claimed to be more than a member of the "Harvard research group" associated with them, despite the fact that for more than twenty years he was its most senior member and its principal and most effective spokesman.<sup>1</sup> Again, the Hawthorne Experiments, and even Mayo's recruitment to Harvard are sometimes represented as direct consequences of the setting-up of the Harvard Fatigue Laboratory under L. J. Henderson; in fact both the experiments and Mayo's appointment began before the Laboratory itself was established in 1927. Finally, the group working with Mayo was generally known as the "Department of Industrial Research", although it was not a formally constituted department of the university; nor was the research carried out by members of the group exclusively industrial.

Given the confusion that appears to persist over the precise organization of the studies and of Mayo's role in them, it is useful to try to establish an order of events, according to the more reliable accounts of the Hawthorne studies. The Hawthorne works of the Western Electric Co. was located in Cicero on the West side of Chicago. It was the largest of the Western Electric factories, with some 29,000 employees. At Hawthorne the principal manufactures were telephones and telephone equipment for the American Telephone and Telegraph Company. The Company enjoyed a reputation for advanced personnel and welfare policies, and had welcomed a research study promoted by the National Research Council into the relationship of illumination to individual efficiency. This work lasted from 1924 to 1927 and led to a series of inconclusive and puzzling results which upset firmly-held beliefs about the favourable effects of improved lighting on productivity. As a result the Hawthorne Experiments were instituted by the Western Electric Management themselves, initially with an academic consultant from the

<sup>1</sup> The official accounts are to be found in F. Roethlisberger and W. J. Dickson, *Management and the Worker* (Harvard University Press, Cambridge, Mass., 1939), and T. North Whitehead, *The Industrial Worker* (Oxford University Press, London, 1938). For a review of the popular accounts and criticisms of Mayo, see Landsberger, *op. cit.*, especially pp. 28-47. L. Baritz, *The Servants of Power* (Wesleyan University Press, Conn., 1960) is a vigorous critique of Mayo (and of applied social science in general) which includes rather more detail than is customary in works of this type. At the same time, it would be difficult to class it as a balanced appraisal. See "A Note on Mayo's Critics", below, p. xxxix.

Massachusetts Institute of Technology already associated with the company, Dr C. E. Turner.<sup>1</sup>

The purpose was to record all the conditions—physiological and social, as well as industrial and engineering changes—that might be relevant to workers' performance.<sup>2</sup> The Relay Test Assembly Room was set up in April 1927. Mayo heard about the progress of the studies in the following winter and in April 1928 accepted an invitation from the Western Electric Management to "observe the test room and to make suggestions".<sup>3</sup> He was therefore not involved in the design of the first of the experiments. He did however establish a close relationship with Western Electric executives and much in the subsequent scope and continuity of the programme appears to have depended on Mayo as an essential link between researchers and company.<sup>4</sup>

Mayo enlarged the perspectives of the studies by introducing a number of academics to Hawthorne, notably the social anthropologist W. Lloyd Warner: this resulted in the setting up of the Bank Wiring Room study, one of the classics of small group research and still a point of departure for studies of restrictive practices on the shop floor.<sup>5</sup>

Mayo took a special interest in the employee-interviewing programme which was designed to throw light on the development of workers' attitudes and on the influence of attitudes on output. Eventually more than 86,000 comments were analysed,

<sup>1</sup> Mayo himself wrote: "Special mention must be made of those officers of the Western Electric Company whose intelligent insight designed and adapted the experiment, whose courage and persistence carried it through." Foreword to T. North Whitehead, *op. cit.* p. viii. Some detailed information about the immediate background to the start of the Experiments in April 1927 is given in Baritz, *op. cit.*, pp. 78-83.

<sup>2</sup> Cf. Mayo, *Social Problems*, p. 62 of this volume.

<sup>3</sup> Baritz, *op. cit.*, p. 90. It was not the case that Mayo had only one contact with the senior Western Electric management, as the account by Baritz suggests. He was certainly in touch with George A. Pennock, a superintendent at Hawthorne, who had attended a talk given by Mayo at the National Industrial Conference Board, and had told Mayo about the studies on that occasion.

<sup>4</sup> "One of his closest colleagues recalled that, instead of taking the Hawthorne executives to their country club for lunch, Mayo took them for a bowl of onion soup at one of the several lunchrooms on Cicero Avenue . . . the relationship between Mayo and his Harvard colleagues and the Western Electric executives began well and apparently continued amicable. . . ." Baritz, *op. cit.*, p. 91.

<sup>5</sup> See Roethlisberger and Dickson, *op. cit.*, pp. 377-568; Landsberger, *op. cit.*; D. F. Roy, "Efficiency and the Fix", *American Journal of Sociology*, Vol. 60, No. 3, 1954, pp. 255-66; T. Lupton, *On the Shop Floor* (Pergamon, Oxford, 1963); A. Carey, "The Hawthorne Studies: A Radical Criticism", *American Sociological Review*, Vol. 32, No. 3, 1967, pp. 403-16; A. J. M. Sykes, "Economic Interest and the Hawthorne Researches", *Human Relations*, Vol. 18, No. 3, August 1965, pp. 253-65. For an indication of Warner's contribution to the Studies as a whole, see Roethlisberger and Dickson, *op. cit.*, p. 389.

made on 80 topics in some 10,000 interviews. This programme, which began in 1929 and lasted for two and a half years, was a direct expression of Mayo's concern to develop what he termed "clinical sociology" and the exercise of "social skills".

Mayo remained in contact with Hawthorne and the Western Electric for the rest of his time at Harvard but it was by no means his major preoccupation. To appreciate the breadth of his interests and his influence, it is necessary to take note of the close relationship he enjoyed with L. J. Henderson.

*Henderson and the Fatigue Laboratory*

L. J. Henderson (1878-1942) was a biochemist of international distinction, among other things the author of a fundamental work on the physiology of the blood. He was a powerful figure in Harvard where he spent virtually the whole of his academic life. He was a particularly close friend both of President A. L. Lowell and of Dean Wallace B. Donham of the Business School. Henderson and Mayo took to one another at once. They were about the same age; their interests were congenial; they were also apparently similar in outlook and in the stimulus they provided to colleagues and students.<sup>1</sup>

When Mayo arrived at Harvard, Dean Donham had begun to reorganize and expand the Business School. The Fatigue Laboratory was established in 1927 under Donham's sponsorship, with Henderson as its director. Financial support was made available by the Rockefeller Foundations for a programme of the laboratory designated as "research in industrial hazards".<sup>2</sup>

The initial focus of the laboratory's work was on normal human physiology; both Henderson and Mayo were concerned to widen this to include environmental factors affecting the individual's adjustment to mental and physical stress. In its Annual Report for 1930, the Rockefeller Foundation recorded that Henderson and Mayo had been concerned, since 1925, with "the psychological factors which control human behaviour (in order to form a basis for understanding problems) in business administration, and particularly in the labor field."<sup>3</sup>

<sup>1</sup> S. M. and E. C. Horvath, *The Harvard Fatigue Laboratory: Its History and Contributions* (Prentice-Hall, New Jersey, 1973), pp. 18-24. The Horvaths' study is an important source for an understanding of this period.

<sup>2</sup> *Ibid.*, p. 21.

<sup>3</sup> *The Rockefeller Foundation Annual Report* (New York, 1930), p. 617 (quoted in Horvath and Horvath, *op. cit.*, p. 21).

The precise organization of the Laboratory, including the respective responsibilities of Henderson and Mayo, is difficult to reconstruct. There were two distinct entities which received and spent the Rockefeller grant. One was the Fatigue Laboratory, under Henderson; the other was the group under Mayo sometimes called the Department of Industrial Research. In an appendix to the *Social Problems of an Industrial Civilization*, Professor George F. F. Lombard (one of Mayo's later collaborators) sets out a list of the researches conducted under Mayo's auspices.<sup>1</sup> It is a formidable catalogue, including a number of what are now familiar and obligatory references in social science, e.g. William Foote Whyte's *Street Corner Society*, Arensberg and Kimball's *Family and Community in Ireland*, Allison Davis's *Deep South*.

Support for this work came from a variety of sources, but it was the Rockefeller Foundation which made the whole enterprise possible.<sup>2</sup>

The informality of the arrangements for the funding and direction of the Fatigue Laboratory shows how close the understanding was between Henderson and Mayo. Undoubtedly Mayo benefited from his ready acceptance by one of the most influential members of the University.<sup>3</sup> His rapport with Henderson conferred manifest advantages on a newcomer seeking to make his way in the Harvard of the inter-war years. At the same time, it was not without certain risks which may account for at least some of the hostility subsequently directed towards Mayo himself.

Henderson was a man of forceful opinions who left no doubt as to his views on social as well as on scientific matters. Chester Barnard (1886-1961), the most important writer on management during the period and a frequent visitor to Harvard,

<sup>1</sup> See Appendix II of this volume, p. 132.

<sup>2</sup> The Horvaths estimate that the Fatigue Laboratory received some 645,000 dollars from the Foundation between 1927 and 1942. There are no detailed accounts of the amounts spent; or, as they say, "actually retained by Mayo and Henderson". Professor Lombard attempted, for the Horvaths' study, a reconstruction of the Fatigue Laboratory budget from which it emerges that Mayo and Henderson sometimes made grant applications jointly, sometimes separately. He describes Mayo and Henderson as "frugal researchers. It was not unusual for one of them to have unexpended funds in his research accounts at the end of the period of a grant. When this happened, he insisted that the balances be returned to the Foundation." Horvath and Horvath, op. cit., pp. 21-3.

<sup>3</sup> The best accounts of Henderson's career and interests, from the social science aspects, are to be found in Bernard Barber (ed.), *L. J. Henderson on the Social System* (University of Chicago Press, Chicago and London, 1970) and Cynthia Eagle Russett, *The Concept of Equilibrium in American Social Thought* (Yale University Press, New Haven and London, 1966).



described him as "intellectually quite arrogant. . . . He didn't suffer fools gladly, but he was highly respected by scientists."<sup>1</sup> Henderson was the moving spirit behind the Society of Fellows, an elitist institution within the University designed to encourage the work of younger researchers "of exceptional talent and independence in any field of science and scholarship".<sup>2</sup>

Three of the Junior Fellows, George Homans, William F. Whyte and Conrad Arensberg, worked with Mayo. Homans acknowledged his intellectual debt to both Mayo and Henderson, but wrote vividly of Henderson's more flamboyant characteristics. "His beard was red but his politics were vigorously conservative. . . . His method in discussion is feebly imitated by the pile-driver."<sup>3</sup> Mayo was judged "a considerably more modest man than Henderson".<sup>4</sup>

In the 1930s Henderson's talents were harnessed to an enthusiastic presentation of the ideas of the Italian social scientist Vilfredo Pareto (1848-1923), whom he placed in the company of Galileo and Machiavelli. Henderson was particularly attracted by Pareto's incorporation of the concept of system into social science and by the related possibilities inherent in the idea of equilibrium.<sup>5</sup> Henderson's career in the physical and life sciences had developed against the stimulus of new ideas of system and equilibrium, in which the analytical methods of physical chemistry had been recognized as applicable to the study of living things. Henderson's own early work on acid-base equilibria in the blood was part of this movement, the crowning point of which was the theory of W. B. Cannon, another of Henderson's Harvard intimates, of *homeostasis*, or equilibrium in the body.

Henderson saw Pareto's work as the means by which sociology could be added to the continuum of the natural sciences. But this was not to take the form of a slavish application of natural science to social science, an enterprise for which Henderson

<sup>1</sup> William B. Wolf, *Conversations with Chester I. Barnard* (Cornell University Press, Ithaca, New York, 1973), p. 2.

<sup>2</sup> Barber (ed.), *op. cit.*, p. 7.

<sup>3</sup> Crane Brinton (ed.), *The Society of Fellows* (Harvard University Press, Cambridge, Mass., 1959), p. 3.

<sup>4</sup> Horvath and Horvath, *op. cit.*, p. 19.

<sup>5</sup> The summary which follows is based mainly on Barber, *op. cit.* and Russett, *op. cit.* See also L. J. Henderson, *Pareto's General Sociology: a Physiologist's Interpretation* (Harvard University Press, Cambridge, Mass., 1935); George C. Homans and Charles P. Curtis Jun., *An Introduction to Pareto, His Sociology* (Alfred A. Knopf, New York, 1934); Raymond Aron, *Main Currents in Sociological Thought*, Vol. 2 (Penguin Books, Harmondsworth, 1970).