

Scientific Management in the Netherlands

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Review of: E.S.A. Bloemen, *Scientific management in Nederland 1900-1930* (Amsterdam: NEHA, 1988; ISBN 90-71617-05-X), 234 pp. ill.

The years between 1880 and 1914 have often been described as a period of transition and crisis in western, industrialized countries. Economically, the era of free trade, dominated by Great Britain, came to an end. New industrial nations, especially the United States, Japan, Germany and France, entered the market for mass-produced commodities. Innovations in the technology of production and the extension of transport networks (especially railroads and steamship lines) created a world market for a tremendously growing output of products. Overproduction was a continual threat. Rivalries mounted between the most powerful industrial nations, leading to protectionist policies, the creation of colonial empires, and an unprecedented arms race, eventually resulting in the "Great War." While the peoples of Asia and Africa were subjected with, mostly, astonishing ease by means of superior weapons and organization, the white masses in the industrial nations started to organize themselves and to challenge the dominance of the bourgeoisie. After 1880 large socialist parties appeared in all industrialized countries, claiming up to 40% of the votes in national elections. Their leaders were convinced that in the near future they would command the support of the majority of the population, and the rapid growth of their parties certainly seemed to warrant this expectation, although it turned out to be wrong. Moreover, there were massive strikes, which were often violently put down. In the years after 1900 e.g. several general strikes, which started in the seaports of France, Italy and the Netherlands, threatened to choke the entire economy.

Many aspects of this crisis can be described as a "crisis of control," resulting from changes brought about by the industrial revolution.¹ This was, essentially, the diagnosis of the French sociologist Emile Durkheim, who argued that the rise of massproduction and distribution of factory goods created national and even global markets, which no producer could oversee. Therefore, he wrote, production becomes unbridled and unregulated, which results in recurring crises. Although the new economy possessed the technology for producing and distributing unprecedented amounts of products, it lacked as yet the power to coordinate the flow of goods, in other words, to create a well-balanced economic system. Durkheim described modernization as the emergence of large-scale systems of interdependent, specialized units, which required intensive communication. If such communication failed to develop, chaos and conflict (at the individual level: "anomie") would be the result.

The main response to this problem was the rationalization of government, both in the state and in private enterprise. The development of bureaucracy, analyzed by Max Weber, is the first example of this. In Great Britain concern about the declining role of the country in the world economy and in international politics – triggered by

¹ See J.R. Beniger, *The control revolution* (Cambridge, Mass.: Harvard University Press, 1986).

the Boer War – led to the formation of an informal, but very vocal, movement for national efficiency.² This movement, which cut across party and ideological barriers (it included Roseberry and Balfour, but also Wells, Shaw and the Webbs), blamed the waning of British dominance on the country's tradition of amateurism in government, which was compared to the much more efficient administration of the emerging industrial nations Germany and Japan. It advocated constitutional changes, putting professionally trained experts in positions of control, creating a planning department and so on. A similar faith in the "gospel of efficiency" was professed at this time by the Progressive Movement in the United States, which carried Theodore Roosevelt into office in 1901. Roosevelt's administration was strongly technocratic, relying on commissions of experts to solve problems of industrial waste and class conflict.³ The idea of efficiency and rule by experts was not new of course: earlier in the century men like Jeremy Bentham, Andrew Ure and Claude Henri de Saint-Simon had argued for similar reform. But in a world of increasing economic and military competition, "efficiency" came to be looked upon as a magic potion, conferring tremendous power on its user.

Problems of control, resulting from the expanding scale of operations, manifested themselves clearly in the large industrial corporations which appeared in the most advanced countries at the end of the 19th century.⁴ In firms employing thousands of workers, often in several different plants, like U.S. Steel, General Electrics, AEG, Bosch, IG Farben, Renault, and so on, the old system of management, in which the owner of the firm personally conducted the production process in close collaboration with his workers, was no longer viable. Supervision of the shop floor was therefore delegated to hundreds of foremen, who were given extensive powers of hiring, firing and disciplining workers. Since there was hardly any supervision of these foremen, they often exercised their power in an arbitrary way, provoking bitter resentment among the workers, who responded with sabotage, physical threats and tacit agreements among themselves to slow down the pace of production. This resentment was also, explicitly or implicitly, behind many of the great strikes that hit these firms around 1900. In the United States a strong anti-trust movement sprang up, which threatened the large corporations with legislative measures. In response to these problems, new management techniques were developed, which aimed at rationalizing the production process and power relations within the firm.

The most pronounced and controversial of these was Frederick Winslow Taylor's "scientific management." Taylor (1856–1915) was the son of a well-to-do lawyer in Philadelphia, who had chosen – very unusual for a young man of his class – to become a machine worker at a steel company, owned by friends of his family. There he soon became gang boss in the lathe department and was confronted with the above-mentioned hostility and "soldiering" (loafing) of the workers. This experience inspired him to design a new system of management, drawing upon wage

² G.R. Searle, *The quest for national efficiency. A study in British politics and political thought 1899–1914* (Oxford: Blackwell, 1971).

³ S.P. Hays, *Conservation and the gospel of efficiency. The Progressive Conservation Movement 1890–1920* (Cambridge, Mass.: Harvard University Press, 1959).

⁴ R. Edwards, *Contested terrain. The transformation of the workplace in the twentieth century* (London: Heinemann, 1979).

systems proposed by other management-theorists such as Towne and Halsey, to which he added technological and organizational improvements. The low productivity of the workers, Taylor argued, was to be blamed upon the top managers, who left the supervision of the production process to the badly qualified and arbitrary rule of the foremen. The underlying reason for this was that the managers, unlike the older entrepreneurs, knew little about the production techniques in their shops. Therefore their first task should be to gather all the technological knowledge, now the exclusive domain of the workers, classify and simplify it and transform it into rules, which could be prescribed to each worker as "the one best way of doing the job." Close analysis of the way each worker carried out his part of the production process ("time and motion studies") should be used to eliminate unnecessary movements and determine the minimum time necessary for performing each task. This should be done by a planning department, from which work cards were to be issued, which prescribed exactly what a worker was to do and in how much time. Workers who carried out their task within the prescribed amount of time were to receive a bonus. The traditional foreman should be replaced by eight specialized bosses, who would take care of quality control, speed of production, repair of the machinery and so on. Taylor claimed that the introduction of his system would dramatically increase productivity and thus profits, while at the same time eliminating the arbitrariness of the foremen's rule. Wages would increase, which would put an end to the endless conflicts between capital and labor. The appeal of his "system" was the denial of the commonplace idea, that relations between employers and workers were a kind of zero-sum game, in which profits and wages could only increase at each other's expense. The broader implications, which Taylor also specified in his work, were technocratic: government should be changed "from power over men to administration of things"⁵ and should be put into the hands of experts. Social efficiency would eliminate scarcity and therefore class conflict.⁶ It was the kind of thinking which was also popular in the Progressive Movement.

Scientific management was only applied sporadically and in a limited way, and mainly in small and middle-sized firms.⁷ There were several reasons for this. First of all, the reorganization of the shop which Taylor prescribed was complicated and would take several years to carry out: most employers would not even attempt it. Secondly, especially the large corporations were at this time experimenting with all kinds of welfare measures (health care, recreational facilities and so on) in order to win the loyalty of their workers, and they knew that the appearance of bosses with stopwatches would spoil any effects of these measures. Thirdly, the labor unions fought the introduction of Taylorism wherever employers tried to introduce it and their objections were widely publicized in the report of a government commission, which appeared in 1915. Nevertheless, scientific management has been very influential in a more general way. It taught employers the need for a thorough knowledge of operations on the shop floor, the necessity of rationalizing the supervision of the

⁵ An idea going back to Saint-Simon. See Beniger (n.1), *The control revolution*, p. 15.

⁶ Ch.S. Maier, "Between Taylorism and technocracy: European ideologies and the vision of industrial productivity in the 1920s," *Journal of contemporary history* 5, 1970, pp. 27-61, on p. 32.

⁷ Edwards (n.4), *Contested terrain*, pp. 101-104.

workers and the possibility of great increases in profits as a result of more efficient organization.

In Europe, large corporations faced similar problems to those in the United States and they sometimes tried similar solutions. But, although Taylor's work was introduced after the great exhibition in Paris in 1900, and although some employers (Renault among them) came to the United States to inspect the new system and to meet Taylor, scientific management did not become popular in Europe before 1914, for similar reasons as in the United States. With the coming of the "Great War," however, thinking in terms of efficiency and planning received a tremendous stimulus. While thousands of workers were called up to serve in the armies, industrial production had to be continued and even accelerated in order to sustain the war effort. The state therefore started to coordinate the import of raw materials and the production of the most necessary goods. In Germany, for example, AEG president Walther Rathenau played an important role in creating an agency for the procurement of raw materials for the War Department. He and his assistant Moellendorf propagated designs for a postwar economic order in which planning and scientific organization of production would put an end to the waste of material characteristic of capitalism. An unprecedented prosperity would be created, and class conflicts would come to an end. But like the American report *Waste in industry*, published in 1921 by a committee led by Herbert Hoover, interest in such grandiose plans receded as the postwar depression gave way to a new era of expansion. A similar development could be seen in Great Britain and France. During the twenties, parts of the Taylor system were combined with elements of Fordism, industrial psychology and other management theories to form a much more modest prescription for rational management.

In the book under review, Erik Bloemen describes the reception of scientific management in the Netherlands. The first two chapters discuss Taylor's "system," in the context of other management theories current at the time, and its reception in the United States and some European countries. The rest of the book treats the impact of scientific management in the Netherlands. Addressing the question this way raises some problems. Dutch industrialists who wanted to improve the organization of their plants could and did make use of the whole range of management literature, of which Taylor's work was only a part (although the most comprehensive and systematic one); they also learned from the practical examples of their colleagues, who might or might not be inspired by Taylor; and of course they invented their own methods. This makes it very hard to trace Taylor's influence with any amount of precision. Bloemen has therefore, rightly, chosen to study all efforts to rationalize industry which went under the name "scientific management." He shows that these ideas and practices conformed only very partially to Taylor's prescriptions. But this is not the most interesting part of his argument. Much more important is the question, also discussed by Bloemen, as to whether there was a "crisis of control" in Dutch industry, and to what extent new management techniques were responses to this problem.

Industrialization started much later in the Netherlands than in surrounding countries. Since the 1850s there were some factories, in different parts of the country, but only around 1900 did a great variety of modern industrial firms appear. However, even as late as 1910, there were not many companies employing more than a few hundred workers, and of course none comparable to the American and German giants: if there was a "crisis of control" in Dutch industry, it must have been much

less dramatic than in more advanced countries. Bloemen addresses this problem in a limited way, by studying the engineering industry and especially the firm of the Stork brothers, one of the most advanced plants in the Netherlands. The organizational problems of this firm, which employed 1245 workers in 1910, were similar to those of large companies elsewhere: arbitrary rule of bosses, provoking tacit resistance by the workers and resulting in low productivity. From 1901 on, Stork experimented with methods of closer supervision and differential wage systems, which he adapted from foreign examples (Taylor's among them). It is of course impossible to generalize about problems of control in Dutch industry from this one example. But Bloemen's conclusion that there were no real problems of this kind (p. 90) is not supported by the facts he presents. Stork's efforts point in the opposite direction and so do the many strikes which occurred around 1900. The bitter conflict over the mechanization of the transshipment of grain in the Rotterdam harbour (1905-1907), for example, turned precisely around the problem of controlling operations which had so much expanded in scale as to become increasingly chaotic. The moderate attitude of most labor unions, to which Bloemen points, does not really alter this impression.

Bloemen analyzes the reception of scientific management at two different levels: public discussion and practical applications. The debate about "Taylorism" started during the first world war. Opinion leaders were J.G.Ch. Volmer, professor of industrial management at the Polytechnical School in Delft, the socialist engineer Theo van der Waerden and the Jesuit priest and self-made industrial psychologist Jac. van Ginneken. The last two were very critical, following the example of the American labor unions, while Volmer was a convinced advocate of the new system. However, the similarities between the three were more significant than the differences. Van der Waerden and van Ginneken conceded that scientific management was only a natural product of technological and scientific progress, which they did not want to be accused of hampering. With some adjustments (especially recognition of the trade unions, which Taylor often said he wanted to eliminate), and when applied with care, it could improve working conditions and the wages of the workers.

These three authors also represent the main groups from which management consultants were recruited after the war: engineers and industrial psychologists. In the later twenties some accountants joined the profession. Bloemen discusses each of these groups extensively. Interestingly, socialists played a prominent role in the spread of scientific management techniques in the Netherlands. Van der Waerden, who had been very critical at first, soon stressed the "elements of progress" which he detected in Taylor's ideas. He was one of the main authors of the socialist party's *Socialization Report* (1920), which, like the Hoover commission in the United States and Rathenau and Moellendorf in Germany, advocated efficiency. E. Hijmans and V. van Gogh (son of the famous painter's brother Theo), who in 1920 founded the first management consultancy bureau, had, like van der Waerden, studied at the Polytechnic in Delft and joined the socialist party. In 1919, the Amsterdam alderman Wibaut, also a socialist and van Gogh's father-in-law, started a bureau for improving the efficiency of municipal government and services. During the twenties, this bureau imposed some drastic reorganizations. When Wibaut was attacked in the municipal council for causing unemployment by this policy, socialists replied that this criticism showed a tragic incapacity to understand the necessities of modernization.

But what about the industrial employers? Unfortunately, very little research has been done on the management of firms in the Netherlands, so we do not know

whether Dutch industrialists were interested in management theories and to what extent they applied them. Bloemen has not undertaken this kind of research either. Instead, in the most fascinating chapter of the book, he discusses extensively the activities of the management consultancy bureau of Hijmans and van Gogh in various companies and government agencies. He concludes that the reorganizations proposed by "the Dutch Taylors," as they were called, did not differ basically from the experiments of Stork before the war – although they were more sophisticated – and that they conformed only partially to Taylor's ideas. Dutch industrialists showed very little interest in organizations like the Dutch Institute of Efficiency. The reception of scientific management therefore does not seem to have caused a fundamental change in management methods in the Netherlands.

I do not find this conclusion entirely convincing. Bloemen has only studied independent management consultants, not all the engineers and personnel managers employed by large companies. Especially the engineers, most of whom had studied at the only polytechnic in the Netherlands, in Delft, and heard the lectures of Taylor-enthusiast Volmer there, were probably influenced by American theories, and may have applied them. That companies did not publicize their organizational improvements and did not readily open their doors to professional advisors like Hijmans and van Gogh is not hard to understand. Research into company archives might show that the influence of American management theories was more important than the author suggests.

Bloemen's book is a well written survey of a very interesting topic. What we need next are detailed studies of management and labor relations in individual firms.

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