

Taylorism, John R. Commons, and the Hoxie Report

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Frederick Winslow Taylor and the scientific management movement are linked in popular consciousness with the deskilling and systematic disempowering of workers. This association has caused difficulty for analysts who are aware that many pro-labor institutionalists embraced scientific management through the interwar years. Recent studies have helped to resolve this apparent anomaly by detailing the contribution made by scientific managers to the reduction of working hours, the democratization of public institutions, and the stabilization of employment [Nelson 1991; Nyland 1989, 1995; Schachter 1989, 1995]. This article adds to this revisionist literature by examining John R. Commons's assessment of scientific management. Commons knew Taylor personally and through much of his life was a critical observer of the movement Taylor inspired. Examination of his views helps clarify the nature of Taylorism and reveals new insights into Commons's character and thought. Given the predominance of the demonized view of scientific management, the paper is prefaced by an examination of some of the evidence underpinning this perspective. Attention is then given to the evolution of Commons through to 1916. Particular emphasis in the latter section is placed on the links between Taylor and the University of Wisconsin, the explication of Commons's views, and the latter's involvement in the production of Robert Hoxie's *Scientific Management and Labor*.

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Scientific Management

Taylor's thought is best revealed in the series of papers he published between 1895 and 1915, in testimony he gave before investigative bodies, and in a summary of his ideas regarding labor prepared by Hoxie shortly before Taylor's death. Hoxie's summary, which was personally approved by Taylor, contains the following definition of scientific management:

Scientific management is a system devised by industrial engineers for the purpose of subserving the common interests of employers, workmen and society at large through the elimination of avoidable wastes, the general improvement of the processes and methods of production, and the just and scientific distribution of the product [Hoxie 1915, 140].

Most analysts ignore this definition and equate Taylorism merely with time study, wage incentives, and labor control. In reality, Taylor advocated wide-ranging and radical restructuring of organizations, be they manufacturing enterprises, government departments, universities, or churches. His restructuring centered on four principles: the gathering together, tabulation, and reduction to rules, laws, and formulae of all knowledge relating to the functioning of the enterprise; the scientific selection of employees and their subsequent progressive development; the bringing together of the science of organization and the scientifically selected and trained workers; and the development of friendly cooperation between management and employees. The first step in Taylor's plan for organizing a manufacturing workplace, for example, was the improvement and standardization of tools, machinery, and equipment, together with the systemization of the flow of production. These steps invariably involved the introduction of new storage systems, cost accounting, and a system of routine maintenance and repair. After these activities had been undertaken, the scientific manager was to consider the labor process, training of workers, and reorganization of sales and purchasing with a view to stabilizing employment and production.

The Taylor system, then, while it certainly involved time study and wage incentives, was in fact an all-embracing program for overhauling the structure of organizations. This program aimed to replace tradition and rule of thumb by science and planning. The centrality of this last element in Taylor's program was highlighted by Rexford Tugwell:

In the early eighties of the last century Frederick Winslow Taylor was a young man working in the shops of Midvale Steel. Through a series of accidental changes in a life which might normally have followed a more routine middle-class course, he had become a foreman. He was, however, a new species of that all-important animal. For he did not believe in foremanship, at least of the old-fashioned kind, and almost at once he set out to displace

the foreman's rule of thumb with a scientifically arrived at "one-best-way." He intended to reduce the functions of the shop to clearly and precisely stated locations, quantities of materials, forces applied, motions to be gone through, and output to be expected. These would then be the terms in which a planning office would set out the job to be done. The directions would be precise. And foremen—in the old sense—would be eliminated. He called it, later on, scientific management. Actually it was planning [Tugwell and Banfield 1951, 133].

It was because he appreciated the significance of Taylor's practical contribution to the development of the planning mechanism that Tugwell often asserted that "the greatest economic event of the nineteenth century occurred when Frederick W. Taylor first held a stop watch on the movements of a group of shovellers in the plant of the Midvale Steel Company" [Tugwell 1932, 86]. Taylor envisaged the planning office as a record-keeping repository and central coordinating center. Its role was to analyze incoming orders, undertake any necessary experimentation, and govern the flow of information to and from operating personnel. Managers, of course, had always planned the use of resources. What distinguished Taylor's efforts was the fact that he strove to develop this activity to the level where one could usefully speak of a science of management. As Harlow Person, manager of the Taylor Society through the 1920s, observed,

[Taylor] integrated mechanisms into an interlocking whole, and the degree to which planning and precise control were developed by him was so great in quantity as to create a new qualitative situation. Planning generally had not been effective because it was based on so many chance factors. Now, with the aid of standardization, calculations could be made with a fair degree of certainty. This made possible the planning-room procedures of routing, scheduling and complete and economical utilization of facilities. It was this precise control through planning and preparation which secured most of the results of increased productivity by eliminating idle times and misapplied efforts, which are the result of many different causes under uncontrolled conditions [Person 1929, 8].

To equate scientific management merely with time study and labor control not only misconceives the breadth of Taylor's thought, but it also misrepresents its critical essence. Taylor insisted repeatedly that scientific management was not a collection of techniques, but rather an approach to management founded on a *commitment to science and friendly cooperation*. He insisted that the replacement of rule of thumb by science and the replacement of caprice by friendly cooperation between employers and workers were the two "absolutely essential" elements of scientific management, all else being of marginal significance. If these essential factors are not present in an organization and/or if employers use scientific method in ways that

do not conform with these key elements, then the enterprise is not being managed scientifically. Failure of analysts to recognize the emphasis that Taylor and his close collaborators placed on the need for worker-manager cooperation has caused many to paint all rationalizers with an undifferentiated grayness, which fails to distinguish between the liberals of the Taylor Society, conservatives such as Henry Ford, and fascists such as Charles Bedaux [see, for example, Wright 1995].

An example of the cavalier manner in which Taylor and indeed the whole scientific management movement is commonly assessed is contained in the work of Donald Stabile. Though Stabile deserves credit for drawing attention to the positive assessment of scientific management advanced by Veblen, his assessment suffers from a number of flaws. First, he accepts uncritically the claim that the deskilling of labor was an integral feature of Taylorism and that the development of scientific management degraded the skills of American workers [Stabile 1984; 1988; 1993]. Despite the confidence with which he advances this charge, Stabile offers only one piece of evidence to support the claim. This is the Hoxie report of 1915, a document which is accepted as Gospel but which, as will be shown, was seriously compromised and must be considered to have little scientific value.

The fact that Taylor repeatedly advocated a program of skill enhancement is ignored by Stabile, who equates Taylor's views with those of Henry Ford. As Chandler [1962, 318] has observed, however, what was common to Ford and Taylor was not "specific ideas, techniques, or methods, but rather the same rational, self-conscious approach to the management of men." Taylor believed, "It would seem to be the duty of employers. . . both in their own interests and in that of their employees to see that each workman is given as far as possible the highest class of work for which his brains and physique fit him" [Taylor 1911a, 28]. Accordingly, his use of time and motion studies aimed to develop workers' full capacities. Ford, on the other hand, refused to undertake the program of training and skill upgrading demanded by Taylor. He preferred a policy of segmentation where tradesmen were given extensive training, but the rank and file were expected to "learn their jobs within a few hours or a few days. If they do not learn within that time they will never be of any use to us" [Ford 1923, 79].

Also ignored by Stabile is the statistical literature relating to the skill content and distribution of jobs. This has revealed that there is no substantial evidence to show that the overall skill level of the U.S. labor force has declined through the twentieth century. As Attewell [1992, 59] notes, even if one focuses only on blue-collar employees, the "numbers fail to document a substantial decline in craft labor over this century." Nor is the charge that the Taylorists sought to deskill labor supported by historical research. Daniel Nelson has criticized the lack of any empirical substance in the work of the so-called radicals who continue to assert the deskilling thesis. His own research indicates employers primarily used the techniques commonly associated with Taylor not to deskill, but rather to transform the unskilled into the semi-

skilled. By so doing, Nelson concludes, it became possible for several generations of poorly educated individuals to gain employment as something other than unskilled laborers or degraded automatons [Nelson 1991, 76].

A second difficulty with Stabile's contribution is the fact that he assumes that scientific management was anti-labor. This is despite the fact that he is aware the American Federation of Labor [AFL] collaborated with the Taylor Society in the interwar period. The extensive literature documenting this collaboration has revealed that relations between the unions and scientific managers evolved through a series of stages [McKelvey 1952; Nadworny 1955; Jacoby 1983].

[In the] history of the relations between scientific management and organized labor . . . three periods are discernible, [1] a period of unmitigated hostility between scientific management and organized labor, lasting from 1911 to 1915; [2] a period of transition during which the harsher features of scientific management were being softened and modified, extending from 1915 to 1917; [3] a period of greater mutual friendliness and understanding between the two, which began in 1919 [McKelvey 1952, 12].

The union-Taylorist friendship was primarily the result of the fact that by 1919 the scientific managers had come to accept the validity of Veblen's observation that if they were to successfully advance their program of industrial and social reform, they had to attain "the tolerant consent of the population backed by the aggressive support of the trained workforce" [Veblen 1921, 167]. Stabile seeks to evade the difficulties the union-Taylorist collaboration poses for his anti-labor depiction of scientific management by asserting that only a few exceptional unions chose this path. Avoidance is also sought by claiming that the Taylorists' embrace of unionism was a facade that was soon abandoned [Stabile 1984, 114]. The reality, however, is that from 1919 to 1950 the peak union bodies of the United States openly embraced the Taylor Society and did so because through this time the Society functioned as an important and unique repository of liberal management thought. As such, it fought an unrelenting campaign against those who sought to apply scientific method to the design of the labor process but rejected the democratic essence inherent in Taylor's commitment to "friendly cooperation" between managers and employees [Nelson 1991, 74; Nyland 1996; Pabon 1992].

A final difficulty with Stabile's contribution is his dismissal of the scientific managers' concern with broad public issues. Because he accepts that the Taylorists were concerned primarily with labor control, he dismisses as inconsequential the fact that they were active in anti-monopoly struggles and the reform of corrupt professional bodies and city governments. This dismissal in turn leads him to misconceive the breadth of the scientific management movement and to miss the challenge posed by the Taylorists' commitment to planning and participative forms of industrial democracy that caused Commons so much concern. Finally, his failure to appreciate the breadth of the movement also causes him to fail to appreciate what it

was that attracted Veblen to the Taylorists. The key here is that the scientific managers shared Veblen's aversion to output restrictions whether these restrictions were imposed by labor or by the "captains of finance." That Taylor was opposed to output restriction on the part of workers has been extensively documented. What has been accorded much less emphasis is that he was equally opposed to monopolists who were willing to put the maximization of profit before the maximization of output.

Because they accept the demonized depiction of Taylorism, some admirers of Veblen have found his enthusiasm for the efficiency engineers to be a source of discomfort. Tilman [1988, 1248], for example, has tried to excuse Veblen by asserting that his positive assessment of scientific managers should be considered an aberration or at best merely an "expository device expressing satirical intent." No evidence is offered in support of this assertion. This is not a surprising given that Veblen was very much in earnest. This is shown by the fact that this individual, who Stabile calls an "uncommitted intellectual," laid aside his non-commitment precisely so that, through the New School, he could assist Taylor's supporters in their quest to realize the reforming potential of scientific management [Layton 1971, 227].

To understand Veblen's enthusiasm for the Taylorists, it is also necessary to appreciate that his attraction was reciprocated. Taylor read Veblen as did Henry Gantt, Morris Cooke, and other members of Taylor's inner circle. Veblen's *Engineers and the Price System*, moreover, was received enthusiastically by Harlow Person [1919] in the Taylor Society's journal. Person reported that he had been an admirer of Veblen since first reading *The Theory of the Business Enterprise* in 1905. His early knowledge of the latter's work is explained by the fact that Person was an economist rather than an engineer. Moreover, before becoming managing director of the Taylor Society, he had been dean of the Amos Tuck School of Administration and Finance. In his review, Person made clear his enthusiasm for Veblen's claim that the captains of finance were sabotaging industry and that the creation of a guild of technicians, who participated fully on the plane of industrial and political life, was a development whose time had come [Person 1919, 2: 4-6].

John R. Commons and the Wisconsin Idea

While Veblen may have applauded the reform program of the scientific managers, this was an enthusiasm not shared by Commons. This is despite the fact that he very much approved of the systematization movement and was an advocate of the "Wisconsin Idea." What the latter involved has been explained by Charles McCarthy [1912], chief of the Wisconsin Legislative Reference Department and a man of whom Commons wrote, "I came to depend on him for everything I tried to do in the state of Wisconsin" [Commons 1934, 107]. The central belief of the Wis-

consin Idea was that the growth of monopolies was undermining both the nation's democratic essence and its productive efficiency. Further, it held that governments were incapable of containing these bodies because they lacked the expertise available to the corporations. The solution to this difficulty was held to be the development throughout society of "what our efficiency expert, Mr. Taylor, does to-day in a great factory" [McCarthy 1912, 13]. McCarthy admired Taylor and befriended Taylor's closest collaborator, Morris Cooke. His admiration was reciprocated by both men, who saw him as "truly the embodiment of the Wisconsin Idea" [McCarthy Papers, Cooke 1921]. Taylor made clear his enthusiasm both for McCarthy and the Wisconsin reform program in a letter he wrote to McCarthy in 1914 after having visited Wisconsin,

Everywhere, while I was in Wisconsin, I heard your name,—sometimes something of a storm center—but always giving me the impression that you were doing a tremendous work. I have thought of little else, since leaving the west, except your great University and the radically new idea which it represents. Unfortunately I can see no hope of our doing similar work in Pennsylvania, at least in the near future. In the end, however, the whole country will be obliged to follow your example [McCarthy Papers, Taylor to McCarthy, 1914].

McCarthy believed that the Taylorization of society required that legislative activity be based on scientific research and that the results of this research be delivered to the populace in a form that would maximize the people's control of government. To achieve these objectives, it was also necessary to ensure that the laws passed by the legislature could be enforced. Hence, a second key element of the Wisconsin Idea was that governments must create a body that would act as "a vigilant servant who, with the help of trained experts wily enough to cope with every turn, will relentlessly administer and enforce" the will of the people [McCarthy 1912, 15]. To these, two collective influences must be melded a third factor, an enhancement of the capacity of individuals to look after their own interests. To achieve this last objective, resources must be diverted from the wealthy and invested in the training of "the farmer and the mechanic so that he will become more efficient, so that he will have a better home, better prospects, and greater skill, which will be an advantage to him in contract" [McCarthy 1912, 16].

The Wisconsin reformers drew their inspiration from work undertaken by the New York Bureau of Municipal Research [BMR], a body that was inspired, in turn, by the ideas of Veblen and Taylor. As Schachter notes,

Frederick Taylor had shown that managers could use a science of work to improve factory methodologies; the Bureau sought to study city structures, procedures and work techniques in order to suggest systematic improvements

that would give citizens a basis for demanding higher performance from and greater control over their government [Schachter 1995a; 1995b].

The BMR stressed the importance of establishing standards for city activities so that their worth could be assessed, strove to develop means by which citizens could participate more effectively in governance, and sponsored numerous studies that resulted in notable changes in New York's administrative practice. In 1911, the Bureau also opened the Training School for Public Service, the first body in the United States dedicated to the preparation of public management specialists. Taylor's influence on the founders of this institution is reflected both in the fact that he lectured at the school and that *Shop Management* and *The Principles of Scientific Management* were required reading for all students.

The substantial reforms achieved by the BMR spread its influence both to other states and to the federal arena. The latter development was exemplified by the 1910 appointment of the Bureau's chief, Frederick A. Cleveland, to head the President's Commission on Economy and Efficiency. This institution was charged with the task of rationalizing the financial and accounting practices of the major bodies that together shaped the federal budget. Cleveland defined scientific management as "the intelligent direction and control of affairs,—direction and control based on complete, accurate and well-digested information," or in other words, "planning" [Cleveland 1911, 314]. One of the earliest members of the Taylor Society who was not an engineer, Cleveland collaborated with Taylor and Cooke and accepted their invitation to sit on the Board of Trustees of the National Bureau of Utilities Research. The latter was a body the two engineers established to provide city governments with the technical knowledge needed to combat the monopoly power of the utilities and by so doing, "make the corporation crowd tremble" [Cooke to Brandeis, November 7, 1914, cited in Mason 1946, 420].

At Wisconsin, McCarthy and fellow liberals sought to implement similar policies to those advocated by the BMR. However, what made their efforts unique was the central role they accorded to the university in their campaigns. Commons entered this reform-orientated environment in 1904 when he accepted a teaching position at Wisconsin. When he arrived, the president of the University, Charles Van Hise, explained that all staff were expected to teach, undertake research, and assist the resolution of social problems. These demands do not appear to have caused Commons any serious disquiet, and he quickly embraced the positive attitude to the administrative state that was at the heart of the Wisconsin Idea. Henceforth, he was to argue that if capitalism was to be "made good," the power of monopolies needed to be contained and relations between workers and employers founded on a strong legislative base that both established a floor to wages and facilitated an effective bargaining process that reflected the market valuation of skills and other institutional influences [Wunderlin 1992, 67]. Further, the Wisconsin program enabled him to continue many of his activities of the previous five years during which he had

worked with E.A. Filene of the National Civic Federation as an industrial conciliator, with N. I. Stone at the Bureau of Economic Research on the construction of index numbers, and with William Walling on the Industrial Commission papers. Interestingly, the first two of the aforementioned men were subsequently to become active, long-term members of the Taylor Society and the last an enthusiast for Taylor's ideas within the American Federation of Labor.

Whether Commons was aware of Taylor when he arrived at Wisconsin is unclear, but he certainly knew of the systemization movement, having just completed a federal government report on output restriction. The fact that he was very much interested in systemization was made clear soon after he arrived at Wisconsin, in a paper he presented to the American Sociological Society. Titled "Class Conflict. Is it Growing in America, and is it Inevitable?" the paper examined the primary causes of class conflict in American industry. Among the sources of conflict examined was the work of those "production engineers" who utilized the "new science and art of industrial psychology." Commons asserted that these technicians were providing employers with very effective incentive systems and new ways of dividing the labor force and as a result were attaining increases in productivity that were "outstanding" and "unheard-of." Indeed, he observed they "may well be compared with the great inventors of the turbine and the dynamo in what they are doing to reduce cost and multiply efficiency" [Commons 1913, 74].

Commons approved of these developments but warned that the tendency of the production engineers to standardize work processes threatened to increase class conflict. He recognized that the possibility of this occurring was moderated by the fact that the technicians' activities provided workers with new career opportunities. Nevertheless, he remained concerned that if insufficient restraints were placed on the technicians, the negative impact of their activities could outweigh their moderating influence. His prescription, both for this difficulty and for the other primary causes of class conflict that he identified, was to strengthen the capacity of labor to resist excessive demands by technicians and by those who employed them. This was to be done by utilizing law and organization in a manner that would "place social classes on an equilibrium" and by so doing enable workers to match their employers in contract.

In advocating this equilibrating notion as the means for resolving class conflict, Commons was not in opposition to any essential element of Taylor's thought. Where there was a fundamental break between the two men was over the issue of who had responsibility for decisions relating to production. Taylor believed workers and managers both had a responsibility to ensure that the resources of enterprises were utilized in the most productive manner possible. Commons, on the other hand, believed workers had no such responsibility. In a second 1906 paper, titled "Restrictions by Trade Unions," he asserted that in "modern industry it is the employer—the one who assumes the risks of business—upon whom the responsibility of production

is placed" [Commons 1913, 121, 124]. Workers provide the firm with their capacity to labor and must have the right to bargain collectively where this is necessary to ensure they get an adequate share of the wealth created. However, bargaining must be confined to issues relating to distribution. Adhering to a hierarchical concept of the firm, Commons insisted that workers had no right to bargain with the employer over questions relating to production and investment. As Wunderlin [1992, 67] has observed, even before he came to Wisconsin, Commons had made it clear he believed these were issues that necessarily remained the prerogative of the employer. Indeed, he insisted that if workers are to attain an adequate share of the final product, it is vitally important that they do not accept any such responsibility. For to do so would undermine their ability to bargain with the other claimants of the firm's output. So significant did Commons consider this factor, he insisted that should a union enter into a relationship designed to guarantee production, it invariably ceased to be a union.

When the union takes the risks and responsibilities of production, it becomes, not a cooperator with the employer, but a competitor. Herein is failure. If it succeeds, then it raises up in its own ranks an element interested in profits rather than wages. This element becomes exclusive, treats its fellow-members as employees, hires outsiders if it can get them cheaper, and, sooner or later, goes over to the other employers or is expelled by such remnant of the union as survives [Commons 1913, 124].

Rather than agreeing to share responsibility for wealth creation, unions should yield control of the production process to the employer and confine themselves to issues relating to distribution. In short, a union should be "simply a combination to get a larger return," that is, a bargaining agent that strives to improve workers' employment conditions while acknowledging that the employer has sole responsibility for ensuring the creation of wealth.

That unions must disavow any responsibility for production was a notion that was accorded particular stress by Commons when subsequently he confronted Taylor and his inner circle. This confrontation occurred as a result of the scientific managers' 1911 public opposition to a rate increase demanded by the railroad corporations. Led by the "People's Attorney," Louis Brandeis, the engineers opposed the increase because they believed that if the railroads overhauled their management practices they could maintain profitability and wages without higher rates. As a consequence of this intervention, the Taylorists gained public acclaim, but they also gained the bitter enmity of both the railway owners and the railway unions, the latter having supported the demands of their employers. Through the 30 years that Taylor had been developing his system of management, he had never previously been confronted by overt union resistance. Following the railway hearings, however, the unions cast a spotlight on his activities and when they did, what they be-

lieved they saw was an enemy committed to speed-up, anti-unionism, and the displacement of labor.

Commons responded to the intense hostility that broke out between Taylor and organized labor by taking part in a 1912 American Economic Association round table on scientific management. The debate was chaired by Harlow Person, but unfortunately Commons's contribution is not recorded. His position was made clear, however, in a paper he published in the *American Economic Review* the same year. In this paper, Commons wanted to determine whether "the principles of trade unionism and scientific management [are] in irrepressible conflict" [Commons 1913, 135]. He believed that the two movements would necessarily remain in conflict for as long as scientific managers continued to promote policies that struck at the heart of worker solidarity and hence at workers' ability to organize. The most important of the latter was the technicians' demand that workers must abandon collectively imposed output restrictions. This demand was founded on the technicians' belief that worker and manager had a shared responsibility for ensuring the productive use of the firm's resources. Union-imposed restrictions on output therefore were unreasonable and if at all possible should be avoided by bargaining with workers as individuals rather than as members of a collective. This was an arrangement that unions could never accept. Hence, Commons held that the "real questions" are "can scientific management deal scientifically with organizations as well as individuals? Is there a science of industrial organization as well as a science of engineering details?" [Commons 1913, 137].

Commons believed it was possible to develop such a science. However, he was insistent it needed to be developed on the assumption that labor could not and should not accept any responsibility for ensuring output was maintained. Building on this principle, he held it should be possible to develop means by which the employers' desire for enhanced productivity and the workers' desire for job security and a reasonable wage could be reconciled. Citing a paper that he had published with John Frey of the Molders Union, he noted that in the nineteenth century the molders had attempted to cooperate with their employers but had found that the latter invariably undermined the cooperative spirit by cutting the wage rate. Eventually, this had compelled the union to impose restrictions on output, a development that in turn led the employers to organize in a manner that enabled them to speak with a single voice. Thus was established a form of "representative government," which enabled the two sides to negotiate "trade agreements" that each side respected and disciplined. With such an arrangement in place, the union was able to remove its restrictions on output and allow each worker to earn as much as he or she wished at the agreed rate. Thus, two "conflicting principles—efficiency and restriction—are brought into a kind of equilibrium by the higher principle of organization" [Commons 1913, 139-140].

Commons did not believe trade agreements were the only means of balancing the employers' need for enhanced efficiency and the workers' need to retain the right to impose output restrictions. What he did believe was that the best way of managing the contradiction between these two needs was to organize employer-employee relations in a manner that ensured neither side was able to dominate the other and so was compelled to bargain and reach an acceptable compromise.

Open conflict can be avoided . . . in the same way that similar conflicts are met in the region of politics; namely, a constitutional form of organization representing the interests affected, with mutual veto, and therefore with progressive compromises as conflicts arise [Commons 1913, 140].

The role of the scientist in this process was to investigate the details of the relationship between the two sides and advise the participants as to the best way of combining these details into a workable system. Commons acknowledged that along with their many other positive contributions to industry the scientific managers had improved on earlier systems of wage determination. Where employers had traditionally treated labor time as a commodity, to be bought at the lowest price that the market allowed, the engineers recognized the principle of a minimum wage tied to need with the incentive part of the wage built on this foundation. The supposed problem with the engineers, however, was that they embraced a "machinery" theory of labor, which saw the worker as little more than an ingenious and necessary device that happened to be governed by laws of psychology rather than physics.

This device has certain fixed charges which must be met in the fashion of maintenance, repairs and depreciation, by a minimum wage to support a standard of living. Over or under this, each individual differs from others . . . in the psychological motives that induce attention, continuity, watchfulness . . . And it is by nice experiment and comparison that the precise point is determined where the maximum ratio of output to input lies [Commons 1913, 142].

This mechanistic perspective was compounded by the fact that it is the employer and not the engineer who has control of the workplace. Commons was aware that engineers were sensitive to this fact but was convinced they offered workers little protection from employers subjected to the competitive pressures periodically brought on by the business cycle, which all too often compelled them to abandon reform for short-term survival. Given this situation, the engineers' demand that workers bargain as individuals and accept some responsibility for the maintenance of output remained unacceptable. In conclusion, Commons observed that while it was true that the efficiency engineers were making important contributions toward the solution of labor problems, their mechanistic and individualistic perspective was not capable of resolving the conflict between efficiency and restriction.

It is not enough merely to adopt clever devices of compensation designed to separate laborers into individual bargaining units, for it is exactly this separation the competitive conditions are forcing laborers, as well as capitalists, to overcome. It is also necessary to adopt methods that will recognize the mutuality and solidarity of labor and to convert this craving for harmony and mutual support, as well as the impulse of individual ambition, into a productive asset [Commons 1913, 148].

The Federal Industrial Relations Commission

In his autobiography, Commons claims that by 1913 he had become convinced the dispute between the scientific managers and the unions was the most irrepressible conflict confronting American industrial relations. It was an issue highly likely to intensify class hostility and as such politicize labor and perhaps induce the abandonment of the "pure and simple" unionism Commons so much admired. That his concerns were justified is indicated by the fact that the AFL elected to move their campaign against the Taylorists to Congress where they demanded a bill that would make many of the engineers' activities illegal in government enterprises. This was certainly not a strategy favored by Commons for not only did it threaten to take from the employer the right to manage production, but it did so by the utilization of state power, rather than by pure and simple bargaining. Consequently, he was convinced an alternative means for resolving the conflict between the two movements had to be found. For Commons, this meant that the scientific managers had to accept collective bargaining and the unions' right to impose certain restrictions on output.

Commons obtained the chance to facilitate a rapprochement between the scientific managers and the unionists in 1913 when he was appointed to the Commission on Industrial Relations. This body was charged with determining "the underlying causes of dissatisfaction in the industrial situation." That the Commission chose to include the study of scientific management under this rubric was the result of efforts on the part of Charles McCarthy. In November 1913, McCarthy and Van Hise visited Taylor in Philadelphia and were dismayed to hear of the bill before Congress. McCarthy responded immediately after he returned to Wisconsin, writing to Taylor and informing him that he was urging upon Commons the need to have the Commission on Industrial Relations investigate "what scientific management is doing for the working people" [Taylor Papers, Taylor to McCarthy, Dec. 4, 1913]. Aware that a number of the Commissioners had only a casual knowledge of Taylor's work, McCarthy also urged Commons and the Commission's chairman, Frank Walsh, to visit Taylor. McCarthy kept the latter informed of these developments and when so doing added, "I want you to know that I am going to help out as much as I can in

this business, thoroughly believing in your work. I do not have to be hit on the head by a club to understand what you are doing" [Taylor Papers, McCarthy to Taylor, Dec. 9, 1913]. As a result of his lobbying, McCarthy appeared before the Commission on January 10, 1914, and was subsequently able to inform Taylor that the Commission was to investigate scientific management [Taylor Papers, McCarthy to Taylor, Jan. 10, 1914].

The Commission's study began in April 1914, with the examination confined to "the question of the relations that arise naturally between employers and employees in the application of efficiency systems of scientific management" [Commission on Industrial Relations 1916, 1: 765]. Taylor and a number of other engineers testified as did several union officials and individuals not aligned directly with either camp. The question that dominated the hearing was whether scientific management was capable of according workers a collective voice in the determination of employment conditions. All but one of the union officials who gave evidence asserted that they believed their conflict with the Taylorists could be overcome if the technicians would accept collective bargaining. This was a viewpoint also conveyed by Samuel Gompers, who informed the Commission in writing that "the great obstacle to any . . . agreement by employers and employees upon scientific management has been the refusal of the employers to recognize the union." He further advised that if this issue was resolved it was probable the Taylor system could be transformed from an "injurious" to a "beneficial" program [Gompers to Hoxie, cited in Nadworny 1955, 89].

Recognizing that the Commission wished to find some means of reconciling scientific management and unionism, Taylor made clear his often repeated claim that he was not opposed to unions. Indeed, he observed that he looked forward to the day when unions would join with the scientific managers in seeking to enhance the wealth-creating capacity of industry [Commission on Industrial Relations, 1916, 1: 789]. But at the same time, he insisted he would not accept that bargaining power should be the prime factor determining conditions of employment. For Taylor, this was synonymous with demanding that force, rather than research and experimentation, should govern industrial life—an assertion he simply could not accept as either efficient or democratic.

Commons was in attendance when Taylor gave his testimony but did not ask him any questions. When subsequently he did take up the part of cross-examiner, it was to flesh out the nature of the wage system offered by the scientific managers and to make the point that their base wage was without any scientific foundation. He also sought to highlight the fact that Taylor provided workers with little protection from employers who abused his techniques, and that, given their experience with efficiency wage systems, workers' fears of what scientific management might portend were justified [Commission on Industrial Relations 1916, 1: 829, 851, 935-938]. In making these observations, Commons's fundamental point was that "scientific man-

agement, no more than day wage or any other thing, can automatically prevent the final contest between labor and capital on those three points—the base wage, the bonus and the amount of the task" [Commission on Industrial Relations 1916, 1: 838]. Hence, it followed that conflict was inevitable, and if scientific management was to be introduced, it had to be accompanied by collective bargaining.

The Commission put to Taylor that scientific management offered workers no effective voice in the determination of effort norms or the design of production processes. He insisted that this was not the case and that he had always accepted that it was imperative workers' opinions be heard and respected. He acknowledged that there could exist fundamental but honestly held differences of opinion between managers and workers. In such cases, he insisted that standards should be decided by debate and scientific method. Pushed to explain what he would advocate should these methods fail to induce agreement, he volunteered that he would welcome the establishment of a government tribunal to which such issues could be referred [Commission on Industrial Relations 1916, 1: 806]. How such a body would function Commons elected not to investigate. There were two witnesses, however, who did attract his close attention. The first was Robert Valentine, chairman of the Wages Board of Massachusetts, who gave as his occupation "industrial counsellor," by which he meant "a man who is devoting all of his time to studying the relations between employers, employees, and the public" [Commission on Industrial Relations 1916, 1: 852]. Like Commons, Valentine saw himself as a scientist concerned with the shaping of employer-employee relations, his role as scientist being to study the details of any given industrial situation and to offer counsel as to the best way to combine these details into a workable system. Also like Commons, Valentine was convinced the best way to resolve the conflict between scientific management and unionism was by establishing collective bargaining structures that would equilibrate the interests of the two sides, a notion he described as industrial "constitutionalism."

I mean a rather condensed [form] . . . of precisely the same thing we have seen going through the political governments throughout the world—principles of representative government, of checks and balances, of all concerned having a voice and being connected with an educative process in making determinations [Commission on Industrial Relations 1916, 1: 853].

Valentine freely admitted that he was not a technician and had never actively participated in the installation of an efficiency system. He observed to Commons, "I am not an efficiency man myself and not an engineer or anything of that sort. My whole duty is that of studying the relations between employers and employees, and I only come to the engineer and the accountant on the edge of things" [Valentine 1916, 1: 858]. What practical knowledge he had of the scientific managers' work came from having "run into it on the slant in a number of places" and from having studied one of Taylor's model enterprises [Commission on Industrial Relations 1916, 1: 853]. Commons, nevertheless, was clearly taken with the man and asked

him to provide the Commission with a written statement of his principles along the lines that had been advanced by Taylor.

The second witness who aroused Commons's interest was Louis Brandeis, a long-time enthusiast of both scientific management and organized labor. Brandeis shared Valentine and Commons's belief that it was vitally important that the conflict between Taylorism and unionism be reconciled [Brandeis, Commission on Industrial Relations 1916, 1: 991; Brandeis 1911, 35]. Where Brandeis broke from the other two men, however, was over the question of exactly what is labor's "proper part" in the management process.

Commons and Valentine believed the "labor problem" was solely a problem of distribution, with production being the prerogative of the employer. Brandeis could not accept this demarcation. The key term dominating Valentine's notion of industrial democracy was *consent*. He believed employers should gain the consent of their employees before introducing any workplace changes that might impact on the workers' conditions of employment. The term emphasized by Brandeis, on the other hand, was *responsibility*. He considered the improved conditions of employment that scientific management and unionism could generate to be a means, rather than the final goal. Good conditions of employment would provide the economic foundation that was required if society was to create citizens who were self-respecting members of a democracy. The foremost responsibility of the Taylorists, consequently, was to shape their practice to a form compatible with people's individual and collective desires and aspirations. The union movement, on the other hand, had a responsibility to ensure that workers did not forego the improved living standards that scientific management could provide. They also had a responsibility to ensure that a situation was not created where employers would feel compelled to use the tools being developed by the scientific managers as instruments for circumventing unionism. Finally, where Valentine believed it was sufficient that workers be conceded the right to grant or withhold their consent, Brandeis insisted such a demand was totally inadequate. To merely cede workers the right to withhold their consent left managers and workers as adversaries, one of whom was responsible for managing the resources available to the enterprise and the other merely a resource to be managed. It left workers dependent on others to provide them with the ability to gain their livelihood and as such incapable of attaining the independence and control over their lives necessary in a democratic society. Democracy required that workers share the responsibilities of management and this did not mean merely the management of wages, hours, and working conditions, for "we may have all those things and have a nation of slaves" [Brandeis 1916, 8: 7663]. Rather, "the worker must have a part in the responsibility and management of the business" [Brandeis 1916, 1: 1005].

Writing to his friend Robert W. Bruere of the New York Bureau of Municipal Research, Brandeis made clear that he believed the "great developer" of democracy

was responsibility and that the devolution of this responsibility to workers must not cease until they assumed full responsibility for the management of the industries in which they labored [Lief 1936, 439]. Similarly, to the Commission he observed:

[T]he end for which we must strive is the attainment of rule by the people, and that involves industrial democracy as well as political democracy. That means that the problem of a trade should be no longer the problems of the employer alone. The problems of his business, and it is not the employer's business alone, are the problems of all in it. The union cannot shift upon the employer the responsibility for conditions, nor can the employer insist upon determining, according to his will, the conditions which shall exist. The problems which exist are the problems of the trade; they are the problems of employer and employee . . . There must be a division not only of profits, but a division also of responsibilities. The employees must have the opportunity of participating in the decisions as to what shall be their condition and how the business shall be run. They must learn also in sharing that responsibility that they must bear to the suffering arising from grave mistakes, just as the employer must. But the right to assist in making the decisions, the right of making their own mistakes, if mistakes there must be, is a privilege which should not be denied to labor. We must insist upon labor sharing the responsibilities for the result of the business [Commission on Industrial Relations 1916, 8: 7659-7660].

The Hoxie Report

Brandeis's perception of the proper place of workers was in agreement with Taylor's belief that employees should bear some responsibility for output. Taylor was stung, however, by the criticism that his system failed to give workers adequate voice or protection. Consequently, in October 1914, he gave a public address to the Taylor Society in which he stated that he would be happy to see unions allowed half the say in the appointment of the technicians whose job it was to design and install the techniques of scientific management. Indeed, he insisted, he would be delighted to have them fulfill this role provided the unions accepted that the appointees must be scientists and not merely bargaining agents. In conclusion, Taylor offered what was to prove his last statement on unionism,

The unions have done an immense amount of good. Unions have made better working conditions. They have stopped great injustices in the trades and for that they deserve commendation. Because a man points out that they are doing a few things that are wrong it does not mean that he does not tolerate anything that they are doing [Taylor 1914a, 3].

Taylor's means of reconciling unionism and scientific management was not a solution acceptable to Commons. It amounted to nothing less than that unions should be accorded a primary role in the management of the production process. This solution was fundamentally at odds with Commons's belief that employees must not accept any responsibility for the creation of wealth. While reconciliation between scientific management and unionism remained an important objective, he could never accept that it should be on the foundation advocated by Brandeis and Taylor. Accordingly, upon completion of the Commission's hearing, Commons took steps that appear to have been designed to promote what he believed was a more acceptable solution. He proposed that a study be undertaken to examine the claims of both sides of the dispute, and to prepare for this investigation a confidential hearing with John Frey of the International Molders' Union was held. Frey was a close friend of Commons and shared his belief that the worker had much to gain from scientific management, but that the new science had to be made compatible with the demands of organized labor. At the private hearing, the two men determined the nature of the investigation and Commons subsequently appointed Robert Hoxie of the University of Chicago to head the project. Hoxie was also a friend of Commons and of Frey. He was an economist who embraced Commons's devotion to collective bargaining, his conviction that "social interaction" and research can play a positive role in the amelioration of class conflict and his belief that it was important to reconcile scientific management and unionism [Hoxie 1917, 371; 1911].

When undertaking his study for the Commission, Hoxie stated repeatedly that he very much hoped his research would further the foregoing objectives. To give credence to this claim, he wrote to Gompers and Taylor, asking each to nominate a representative who could assist the investigation. The AFL replied by nominating Frey, a nomination Hoxie accepted immediately. The scientific managers were less generously treated. In the letter Hoxie wrote to Taylor, he observed:

In order that I may get at the bottom of things, and that there may be no doubt as to the unbiassed [sic] character of the investigation, I propose to make this examination accompanied by two experts; one, an efficiency engineer, in whom you and other leading scientific managers have the fullest confidence; the other, a trade unionist of prominence, who has the full confidence of the A. F. of L. organization [Taylor Papers, Hoxie to Taylor, Aug. 31, 1914].

Taylor replied by advancing the names of a number of individuals he thought filled this description. In the process, he expressly dismissed Valentine, observing that, while he was a good man, he was a "novice" who lacked adequate experience. Moreover, Valentine believed union members should be given preference in employment, which was a notion seriously at odds with Taylor's belief that unionists should neither be shown preference nor discriminated against. Hoxie's understanding of Taylor's position was reinforced at a personnel interview given in

autumn 1914. Nevertheless, Valentine was appointed as the non-union representative and this despite Hoxie's claim that it was "of the utmost importance to secure the fairest, best all-round efficiency expert possible for this work, in order that the character and effects of Scientific Management may be most pointedly and effectively brought out" [Taylor Papers, Hoxie to Taylor, Aug. 1914].

Valentine's appointment caused the Taylorists both surprise and distress. Not unjustly, they believed that the counsellor was appointed not because of his knowledge of scientific management, but because of his support for the union movement. Henry Gantt wrote to Taylor that he was "very much surprised that Mr. Hoxie took Mr. Valentine as one of his associates, for Mr. Valentine is neither a manager nor a business man" [Taylor Papers, Gantt to Taylor, Dec. 31, 1914]. After speaking to Hoxie, Gantt also informed Taylor that, unless the scientific managers were willing to embrace preferential unionism, they could not hope to receive a favorable assessment. Taylor replied that he came close to agreeing that there was little to be hoped from Hoxie's study. Nevertheless, he advised, they should continue to cooperate with his committee while there remained the possibility that it might diminish the hostility of even one union leader. Taylor also wrote to Valentine, insisting that it was imperative that he correctly represent the views of the scientific managers. Valentine replied immediately, assuring Taylor that he would accurately convey his sentiments to Hoxie. He also observed that he feared Taylor misunderstood the nature of his appointment and hence his relation to the investigation. Taylor clearly thought Hoxie had appointed Valentine to represent the scientific managers. Valentine insisted that this was not the case and that in fact he had been appointed not as the representative of scientific management, but as the representative of "the interests of employing management in general" [Taylor Papers, Valentine to Taylor, Jan. 11, 1915].

Taylor's decision to continue cooperating with Hoxie, even though the scientific managers were not represented on his committee, would also have been assisted by the fact that in June 1914 Commons appointed Charles McCarthy as the Commission's director of research. Following his appointment, McCarthy wrote to Taylor, assuring him of his support, to which Taylor replied that he was "exceedingly interested" to hear of his appointment for he believed any work supervised by McCarthy was bound to be "thorough and right to the point" [Taylor Papers, Taylor to McCarthy, July 28, 1914]. Unfortunately for Taylor, McCarthy only retained his position until March 1915, by which time Commons was seriously at odds with both Frank Walsh, the chairman of the Commission, and with the trade union commissioners. On March 1, Walsh, with the support of the unionists, dismissed McCarthy, and soon after all other investigators employed by Commons either resigned or were dismissed. Three weeks later, on March 21, 1915, any possible remaining chance that the Commission might be able to reconcile the unions and Taylor were eliminated when the latter died suddenly of pneumonia.

The dispute between Walsh and Commons centered on the fact that Walsh and the union commissioners were determined to expose the oppression workers suffered under capitalism. They made their position clear in that section of the Commission's final report that they alone signed. Here they called for the introduction of a steeply progressive income tax and an expanded role for the state in industrial relations.

The role of the state, through legal enactment, was to prevent employer interference with the right of organization—including prohibiting the discharge of any person because of union membership or employer refusals to confer with authorized employee representatives—and to safeguard children, women, and male employees in public enterprise or in hazardous private enterprise against unfair or substandard conditions and practices [Derber 1970, 120].

They also called for an expansion of the role of unions in the decision-making processes of business enterprises and this "not merely with reference to wages and hours but with reference to unemployment, the recruiting of the trade, and the introduction of machinery and new processes" [cited by Derber 1970, 120].

Commons was convinced that these demands were totally unacceptable. In his report of the latter's position on the Commission, Wunderlin [1992] depicts Commons as a reforming friend of labor, struggling against conservative unionists. In so doing, however, he fails to even mention the fact that in reality Commons threw his lot in with the employers, writing a separate report that all three employer commissioners endorsed with only minor reservations. As with the unionists, Commons and the employers called for an expanded role for the state. However, they insisted this role be limited to the establishment of federal and state nonpartisan industrial commissions, with the power merely to advise on the administration of labor legislation, to conciliate in labor disputes, and to help formulate new legislation.

Derber [1970, 121] has argued that there were two sets of principles inherent in the Commons-employer proposals. The first was that conflict between managers and workers was inevitable though containable with appropriate equilibrating policies. The second was that governments should not regulate collective bargaining. The latter principle Commons and the employers used to justify their rejection of labor's call for the criminalization of employer harassment of union organizers and activists. According to Wunderlin, the demand was rejected because Commons feared it would set a precedent that could subsequently be used against labor. That this fear was uppermost in Commons's mind, however, is a moot point. A more likely explanation is that he feared that criminalizing such activity would tip the scales too far in labor's favor. Certainly he remained a "friend of labor," but the friendship remained based on the belief that labor should have an equality with management and not a capacity to dominate the bargaining process. It is surely reasonable to assume that the need to contain labor's bargaining power would have been given a priority by his employer allies on the Commission. The most they and Commons would con-

cede in this regard was that, where workers found it impossible to organize, legislation designed to equalize the bargaining relationship might be worthy of consideration. And as far as labor's social demands were concerned, all they would grant was a small inheritance tax and a mildly progressive income tax.

While not wishing to diminish the significance that Derber places on the two principles that supposedly motivated Commons to support the employers' position, a third needs to be added to this short list. This was Commons's fundamental belief that unionists must not accept any responsibility for production. The importance of this fact is brought out in his autobiography, where he reports that an issue that caused him particular distress while on the Commission was the Railway Brotherhood's demand that unions be accorded the right to place representatives on company boards. He also makes it clear that by 1915 his opposition to such policies was not founded solely on the fear that such policies would undermine the bargaining power of labor. Rather, it was also based on the fact that he had become convinced that they contained a new threat. This was the possibility that such demands would lead unions to question the nature of capitalist ownership rights and by this route lead them to embrace socialism rather than the pure and simple unionism he insisted was "natural" to American labor. In his autobiography, he reports of this issue,

I wanted them to avoid politics and to direct their energies toward what I knew was the policy of Samuel Gompers in building up strong organizations of self-governing unions able to meet the employers' organizations on an equality, and freed from the interference of politicians and what afterwards came to be known as "intellectuals" or "intelligentsia." Mr. Walsh seemed to me to typify the politician . . . I considered these schemes destructive of unionism, because they dissipated the strike funds and took labor over to the side of capitalists with a minority vote, leading them, by way of politics, into socialism or communism [Commons 1934, 167-168].

DeBrizzi [1983, 108] has argued convincingly that the heightened fear of socialism that activated Commons in 1915 was a consequence of the general drift toward radicalism that had been occurring within American labor over the previous five years. Prior to 1915, Commons's hostility to socialist influence within the labor movement had tended to be muted. From 1915, however, he became an active and open anti-socialist. Confronted on the Industrial Relations Commission by what he considered to be labor's unacceptable demands, he arranged a conference that included himself, the union commissioners, and Samuel Gompers. At this meeting, he sought to convince the unionists that the policies he was putting forward on the Commission were necessary to combat the "socialistic element" in the trade unions. Indeed, he insisted that what he was doing was standing firm for Gompers's "ideals of American unionism" [Commons 1934, 171]. Gompers, however, was not impressed.

Labor historians usually portray the pre-New Deal union movement as having been guided by "pure and simple" unionism. Hurvitz [1971], however, has shown that this is far from being the whole story. Most importantly, this perspective misses the fact that in the years immediately prior to World War I a number of union leaders, led by Gompers, began to think in terms of the comprehensive reform of American capitalism. At the core of their emerging conception of what these reforms should be was the demand that labor should get a share of the control of industry. This was a demand that by 1917 was to lead the AFL to proclaim, "All just labor policies [must rest on the principle] that those associated in the work of production ought to have a voice in management of those things concerning their interests and welfare." This was an evolutionary process that by 1920, in unity with the Taylor Society, was to lead Gompers to declare that workers would never go back to the prewar situation—a declaration that the AFL translated into two strategic goals,

1. To attain a meaningful share for unions in management on the plant level.
2. To have an effective voice in the formation of economic policies on an industry-wide as well as on the national level [Hurvitz 1971, 39].

This was a trend that Commons could not and would not accept. Consequently, he broke openly with the unions and threw his lot in with the employer representatives on the Commission and began what was to prove a sustained campaign to counter this "unnatural" trend in American unionism.

Hoxie was among the investigators dismissed by Walsh. Following his dismissal, he traveled to Wisconsin with his manuscript, his notes, and his project outline. Commons reports that when Hoxie arrived he was in a "nervous and incoherent state of mind." His distress was caused by the fact that he was being pressured to make public his results even though he believed his study was not ready for publication. His distress, moreover, was compounded by the fact that he had applied for promotion at Chicago and feared the consequences of publishing an incomplete piece of scientific work. Confronted with this difficulty, Commons reports that he strove to calm Hoxie's fears and urged him to publish immediately.

I went over all his material with him, explaining that he had the first really scientific study of scientific management, and it would be a serious misfortune if he did not publish as much of it as was already prepared. I promised to get a publisher for him . . . Practically all of his notes on unfinished parts of his outline we eliminated. He went home seemingly cheerful, and put together what was already prepared, although he was anxious because he dreaded criticism in that he had not finished a complete piece of scientific work according to his ideals of workmanship [Commons 1934, 179].

In short, Commons admits that at a time when Hoxie was in a very distressed mental state, he convinced him to publish a study that was highly critical of Taylor whose policies Commons disapproved. Further, that he did so even though he knew Hoxie believed the document was scientifically flawed and that he very much feared the possible consequences of this act for his career. This was behavior that must be considered reprehensible and that was to have the direst consequences.

Hoxie's report was published privately in September 1915 as *Scientific Management and Labor*. Signed by all three committee members, it purports to be a "treatment of the main points at issue between scientific managers and organized labor." The document, however, is heavily skewed, for no consideration is given to what Hoxie acknowledged was a "very important topic." This was those "unfounded and unproved trade union charges against scientific management" [Hoxie 1915, vi]. All charges laid against the Taylorists were published in the report, but only those for which some evidence could be found were actually discussed. As a consequence, the Taylorists were charged publicly with a great many crimes, found innocent of none and guilty of many. The overall impression left by this imbalance is that all important union accusations had been sustained.

Given that we know Commons had access to all of Hoxie's material and assisted in the culling exercise that was undertaken in the preparation of *Scientific Management and Labor*, he must bear some responsibility for its imbalance and misrepresentation. Hoxie, fearing that the report's selectivity would lay him open to the charge of bias, sought to evade the allegation by asserting the work was only an interim report and that he would subsequently present a more balanced study. However, the veracity of this claim must be considered dubious, given the manner by which the committee was staffed. Hoxie's duplicity, moreover, is revealed by the manner in which he claimed he selected his assistants.

. . . an extended search was made for experts acceptable to each side to accompany the investigator in the examination of shops, and to insure the fairness and thoroughness of the study. He was signally fortunate in securing thus the appointment and services of Mr. Robert G. Valentine, Industrial Counsellor of Boston, to represent employing management, and Mr. John P. Frey, of Cincinnati, Editor of the *International Molders' Journal*, to represent the interests of labor [Hoxie 1915, 2-3].

Hoxie's reporting of Valentine's role is important. It is clearly meant to convey the impression that Valentine was the representative of the scientific managers and not "employing management in general," as Valentine had claimed to the now deceased Taylor. This was a ruse that in the long run proved highly successful, with subsequent generations of commentators accepting and invariably mentioning that the study was a "bipartisan survey."

Not having any representative from the scientific management movement on his committee, Hoxie's study must be seen to have had little scientific worth. What it

did have, however, was enormous propaganda value. As structured, it constituted a damning indictment of scientific management that depicted Taylor as an idealist with little commitment to scientific rigor and a tool of management who aimed to both deskill workers and destroy collective bargaining. The study was applauded by the AFL, with John Frey jubilantly but falsely reporting to Gompers that Hoxie had sustained all of labor's major contentions [Nadworny 1955, 95]. It was also utilized by Walsh and the union members of the Industrial Relations Commission as a weapon to lambaste the Taylorists.

Having urged Hoxie to publish, Commons by contrast failed to even mention the study in the report he and the employers submitted to the Commission. In March 1916, however, Commons did come out in support of Hoxie. His decision to do so was possibly assisted by his need to curry favor with the trade union movement whom he had alienated. Given his direct involvement with the preparation of Hoxie's report, he would also have been under pressure to show some support for a scholar and friend whose academic reputation he had put on the line. Reviewing the report for the *American Journal of Sociology*, Commons asserted that Hoxie had proven that the scientific managers aimed to deskill workers and undermine their bargaining power and their unions. He also asserted that Taylor's "democracy of science" had been proven to be without foundation and therefore employment conditions must be determined not by science, but by collective bargaining. He acknowledged that the study was somewhat one-sided but assured his readers this was only because Hoxie had not yet had time to complete his work. What had been published, however, was a model of scientific investigation and this not least because Hoxie had been assisted by representatives from the AFL and employing management. In case the reader failed to register the impression that all sides had been adequately represented, Commons added,

There could scarcely be a more thoroughly verified piece of investigation or a more surely justified set of conclusions, on so critical a subject of hostile interests, except for the inability of the author to take the final step of submitting it, before publication, to the criticisms of the employers, scientific managers, and labor leaders whose shops, claims, and objections had been investigated [Commons 1916, 689].

Not all assessments of Hoxie's report were so kind. The leaders of the scientific management movement accused him of bias and denounced the work as a calculated slander. Their denunciations included a vigorous protest by Kepple Hall, who insisted that the work was a calculated attempt to discredit the scientific management movement [Nadworny 1955, 95]. Harlow Person likewise concluded that Hoxie was guilty of bias and had ensured that an adverse report was produced by comparing the Taylorists' efforts not to other forms of existing management, but to what were ideal conditions.

There are, to one familiar with scientific management in operation, other conspicuous errors; but the great error is that the committee observed and interpreted facts with unconscious bias. Throughout the report scientific management is judged, not as a step in the evolution of industrial society, not as a reasonable and workable advance on current practice, not as a body of principles and mechanisms which must fit into the existing industrial regime. Scientific management is not compared with other current management; it is compared with some form of management which belongs to a regime in which industrial democracy is more fully developed than at present. It is not therefore a reliable report on which to base current individual or state action [Person 1917, 6].

Within the scientific management movement, the charge of bias was reinforced by the lack of rigor with which Hoxie, Valentine, and Frey approached their study. For example, Mary Gilson, the personnel officer for the Taylorized firm of Joseph and Feiss and later a member of the Department of Economics at Chicago University, insisted that Hoxie's study was a "prejudiced analysis" [Gilson 1940, 94]. She reports that when Hoxie and Frey visited the Feiss plant, they did not even bother to go into the factory, merely conducting a "short interview in the office, promising to return at a later date." This was a promise they never kept [Gilson 1940, 93].

More importantly for Hoxie's career, the study was reviewed by Dexter Kimball of Cornell in the *Journal of Political Economy* [JPE]. Kimball's review was generally favorable but nevertheless added fuel to the Taylorists' claims of bias by observing that Hoxie's observations regarding the actual practice of the scientific managers was "open to the criticism that these conclusions have been deduced from personal opinions rather than from actual personal knowledge of the new methods" [Kimball 1916, 197]. To Hoxie, who secretly believed the report was not a completed piece of scientific research, the claim that it was both biased and founded merely on personnel opinion was caustic criticism. It implied, in short, either incompetence or misrepresentation. Given that Kimball's review was published in the *JPE*, moreover, it was a charge launched from within the Department of Economics at Chicago where Hoxie's application for promotion was then being considered.

The editors of the *Quarterly Journal of Economics* entered the debate at this time, asking Hoxie to write an article focusing not on the Taylorists, but on union opposition to scientific management. He responded by producing a paper in which he argued that the primary source of this opposition was the fact that business unionism was the dominant form taken by organized labor in the United States. The outlook and ideals of the business union are those of the business organization, its structures being designed around the need to contract with the employer for the sale of the union's product, that is the labor-power of the union membership. Hoxie held that between business unionism and scientific management there exists an "essential incompatibility." This centered on two basic facts. First, while business unionism

requires stability and standardized conditions, scientific management is dynamic, its very essence being continuous improvement and transformation. Second, the bargaining power of business unions is founded on the craftworkers' exclusive knowledge of the skills of their craft. This is a monopoly the scientific managers would break both by enhancing the employers' understanding of these skills and by uplifting mere laborers to semi-skilled workers who undertook parts of the labor process controlled formerly by the craftworker [Hoxie 1917].

Given that Hoxie believed scientific management was unstoppable and wished to find a way by which unionism could be made compatible with this science, his argument begged the question of whether Taylorism could accord with any form of unionism. This was a particularly topical issue, given that Gompers was in the process of undertaking a reconsideration of business unionism. However, it was a question Hoxie never answered, for through the first half of 1916 his troubles became insurmountable. His application for promotion was rejected, and in June 1916 this blow was followed by the publication of a damning review of *Labor and Scientific Management* in the *American Economic Review*. The review was written by Charles Mixter, an economist who had taught scientific management for seven years at the University of Vermont and who had extensive practical knowledge of time study. Going through the formalities, Mixter acknowledged there was some value in the report but then went on to make a series of damning observations: (1) Hoxie had been excessively critical of the Taylorists' claim that they were developing a science; (2) he had not shown scientific management to be incompatible with collective bargaining as he claimed; (3) he had allowed his "quasi-syndicalist" assumptions to dominate the report; (4) he had written in a manner designed to arouse the antagonism of organized labor in order to further the enactment of the anti-scientific management bill before Congress; (5) by including in his study a number of plants that Taylor had not restructured, Hoxie had tested Taylor's claims in a manner that was "manifestly improper"; and (6) rather than having as his assistants representatives from each side of the debate, he had appointed two "out and out labor men." Clearly deluded by the vague wording of the report, Mixter observed that the fact that Frey and Valentine had been considered "acceptable to each side" was unaccountable, but even allowing that this was the case, it was certainly a questionable method of investigation. Finally, Mixter observed, that irrespective of what Hoxie may have intended, he had failed to take proper advantage of a great opportunity. As a consequence, the "scientific management movement, heretofore too exempt from criticism for its good, may be deprived of the full benefit it should receive by reason of just resentment" [Mixter 1916, 377].

Mixter's review was published in June 1916, and the charges appear to have had a devastating effect on Hoxie. He went into a deep depression that lasted through June 23. This was the first day, following publication of Mixter's review, that he was compelled to face his students at Chicago where he was teaching a course on

scientific management. When the time for the first lecture came, he told his wife that he did not have the power to meet the students and asked her to post a notice to that effect. When she left to do so, he took a razor, slit his left wrist, and then, in the words of the doctor who gave evidence at his inquest, cut his throat "from ear to ear" [Office of the Medical Examiner 1916, 11].

Hoxie's suicide put an end to public attacks on both him and his work. His death was treated as a major embarrassment by the University of Chicago, which failed to mention that his death was by his own hand in its public report. Rather, it was suggested that he had died as the result of a long illness. Nor was any mention made of the fact that his promotion had been turned down or of how he was being treated by those with whom he worked. It is noteworthy, however, that within a week of his death James Laughlin resigned as head of the Department of Economics, a position he had held for 25 years. Laughlin had long been a defender of Hoxie, but it would appear he was no longer willing to come to his aid. A measure of the embarrassment the scientific management study caused Hoxie's friends is indicated by the fact that when Walton Hamilton was asked by the *JPE* to write a review of Hoxie's contribution to economics, the only reference he made to the report, in a 28-page survey, was the following comment which appeared as a footnote,

The only book which Hoxie completed was *Scientific Management and Labor*, published just a few months before his death. It is hardly fair to Hoxie to call it a volume, for it contains only 136 pages of text, and was regarded by its author as a mere provisional statement of his views. Circumstances over which he had no control compelled the early publication in tentative form of what Hoxie intended later to elaborate into a comprehensive study [Hamilton 1916, 882].

Likewise in the *Encyclopedia of the Social Sciences*, Hamilton described Hoxie's report merely as "a book on *Scientific Management and Labor* [1915], which he did not want to print" [Hamilton 1932, 7: 316-317].

John Frey wrote the only commentary applauding *Labor and Scientific Management* to appear after Hoxie's suicide. In a comment on Hoxie's scholarship, published in the *JPE*, Frey emphasized the scientific character of Hoxie's work and this especially so in relation to the study on scientific management. Frey took particular pains to emphasize the manner by which Hoxie had chosen his assistants for the study.

In their selection the field was thoroughly canvassed, and the experts were accepted only after having passed careful tests as to their reliability and knowledge and their standing in the respective groups from which they were chosen [Frey 1916, 891-892].

Again, as had Hoxie and Commons, Frey chose his words so as to give the impression that the scientific managers had been represented on Hoxie's committee

without actually saying as much. This careful word usage can also be seen in the paper on scientific management he prepared for the *Molder's Journal*, where he observed, "The question of Mr. Valentine's selection was referred to some of the leaders of 'scientific management' before his appointment was confirmed by the Commission on Industrial Relations" [Frey Papers, file no. 205]. Many years later, in a situation where he was far less likely to be caught short, Frey simply lied outright. In his reminiscences, he asserts: "Mr. Valentine had the approval of the scientific management engineers" [Frey 1953, 163]. Frey's 1916 depiction of how the Hoxie committee went about its investigation also contrasts markedly with that which appears in his reminiscences. In the latter work, it is clear Frey had little respect for Valentine, and he reports that, when undertaking the investigation, he and Hoxie seldom saw him "because he didn't care to come." Frey also reports that Hoxie knew very little of practical affairs and even less of the industrial world. Realizing this was the case, Hoxie accepted that he had to depend on Frey to interpret what he saw in industry. In Frey's words,

We had gone into our first shop to see how scientific management was being applied when Hoxie said, "John, from now on, you've got to be my eyes and ears, because I don't know what to look for. I know nothing about a manufacturing plant. Furthermore, I don't know what questions to ask." And I think I very largely was his eyes and his ears. That's why he wrote what he did in the report [Frey 1953, 288].

Finally, in his reminiscences Frey admitted that when he and Hoxie came across evidence that did not support the claims of the AFL, he reworked the data until it confirmed his preconceived ideas. Frey justified this activity on the grounds that "science or no science I know human beings" [Frey 1953, 290]. Assisted by this insight, Hoxie produced his so-called balanced and scientific report. The result was a publication that shamed him before his peers, undermined his position at Chicago, and contributed to his suicide. No evidence that Frey accepted that he was in any way responsible for Hoxie's death is indicated in his reminiscences or personal papers. What is present in the latter is a letter from Hoxie to Frey written a month before his death, the conclusion to which conveys both the frailty of the man and the extent to which he was emotionally and intellectually dependent on others. He concludes,

I have had a brief period of illness, due the doctor says, to overstrain of the nerves. I am back at work again but am told that I must go slow for a time. I wish mightily that I could see you and talk things over. You feel like a piece of floating timber. I feel like a squirrel in a cage. I believe that if I could break out I could do something immensely worth while. I am pinning my faith to you for the opportunity [Hoxie 1916].

That Frey may have felt some remorse at the way Hoxie was used is suggested by the vehemence with which he insisted that the latter's work was scientific. Whether he felt guilt or not, he surely could not have missed the irony in the letter he received from Mrs. Hoxie following her husband's death. The letter was written to protest Frey's intention to publicly support the University's claim that Hoxie had died as a result of poor health. Lucy Hoxie, indignant and clearly upset, insisted to Frey that her husband had died not because he was ill, but because of what had been done to his career.

He was sacrificed to the stupidity & malignity of the boss in his department & to the fact that this plant is so lacking in Sci. management that it is perfectly ignorant of the desirability & feasibility of using its men to best advantage and *not wasting* its most precious and irreplaceable assets [Frey Papers, Lucy Hoxie to Frey, 1916].

While Frey may not have felt any responsibility for Hoxie's death, the same cannot be said of Commons. In his autobiography, he admits that he made a mistake in urging Hoxie to publish his research. Shaken, he suffered a nervous breakdown and was not able to return to work until 1917 [Commons 1934, 179].

Commons's confession that he was in error in urging Hoxie to publish his damning indictment of Taylor does not totally negate the responsibility he bears for Hoxie's suicide. Nor does it excuse the fact that because of his and Hoxie's actions, Taylor and his collaborators were denied an honest trial, and a great opportunity to test their claims was wasted. The Hoxie study was a disaster that produced a document that, while academically unsound, has had enormous influence.

In the short run, the damage was contained by Gompers's reappraisal of union responsibilities in relation to production. This reappraisal was greatly assisted by the fact that, following Taylor's public declaration in favor of granting unions an equality in the governance of scientific management, the leaders of the Taylor Society sought to build a positive relationship with the AFL. As Steven Fraser has noted, in the five years after Taylor's death this development carried the Society far to the left of the political spectrum. As a consequence, its members' "formal conception of the industrial polity became increasingly syndicalist, envisioning the democratic integration of functional groups in a rationalized production system, seeing in those committees schools of worker self-management" [Fraser 1993, 133]. In short, the leaders of the scientific management movement came to believe that attainment of the worker-management cooperation, so much desired by Taylor, required that all contributors to wealth creation actively participate in the management process.

Elsewhere I have discussed in detail the consequent alliance that was forged between the Taylor Society and organized labor and that was sustained through to 1950 [Nyland 1996]. Though this alliance has been well documented by adherents to the Wisconsin school of labor history, it has been depicted not as a technician-union challenge to capitalist property rights, but as a sign of the weakness of the American

union movement in the 1920s. The point that the challenge in fact originated prior to America's entrance in World War I, at a time when the union movement was both militant and growing rapidly, has tended to be ignored and thus Commons's depiction of the naturalness of the pro-capitalist nature of American labor is preserved. Also preserved has been the Hoxie report—a document that with the passage of time and repeated uncritical citation by the Wisconsin school came to be accepted as scientific truth. As such it has provided those who would denigrate Taylor and, implicitly, the notion of a Veblenian worker-technician alliance with supposed "scientific" evidence to support their denigration. *Scientific Management and Labor* is the document that modern scholars invariably hold out to justify the demonization of Taylor and the movement he inspired. Unaware of its compromised character, Taylor's critics have been able to utilize the report to justify the cavalier dismissal of his claim that he believed scientific management was "primarily a means of bettering the condition of working people" [Taylor in Copley, 1923, 2:236]. Commons's personal responsibility for this injustice is compounded, moreover, by the fact that he cited the report repeatedly in subsequent years. That Commons continued to do so suggests that Hoxie's death in no way lessened his determination to ensure that union-management relations developed in a manner compatible with his conception of reasonable capitalism.

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