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Taylor's Intellectual Contribution[1]

Consistent Use of the Scientific Method in Management—Tangible Procedures to Make Management Scientific

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THE significance of the intellectual contribution of Frederick W. Taylor is out of all proportion to any recognition it promises to get. Not only was this man widely misunderstood during his life for reasons for which he was in part to blame, but his subsequent recognition is negligible as compared with the actual influence exerted by his ideas in all sorts of places where his name has never carried.

Frederick W. Taylor (1856-1915) lived in the generation which was developing the industrial resources of the United States and was necessarily developing them with the employment of personal qualities and characteristics which were essentially of the pioneering sort. His lifetime saw the growth of industry immediately after the Civil War from small units to the consolidation and nation-wide combinations of recent industrialism. It was the period which saw develop in acute form the conflict between organized owners of capital and organized labor; and saw it increasingly recognized that, in the enormous increase in wealth brought about by the industrial expansion of the latter half of the nineteenth century, the position of the manual worker in the scheme of things did not appear to be commensurately advanced.

It was characteristic of this pioneering that the sources of profit should be viewed extensively rather than intensively. Characteristic also that the financial interests which were in that day involved in industry should be absorbed with balance sheets and stock quotations and be concerned not at all with the requirements of what we today speak of as fundamental operating efficiency.

In such a period the preoccupation of a young engineer in the intensive application of human energy to individual industrial jobs was not calculated to be popular. Indeed, the fierce opposition which Mr. Taylor encountered in the early years of his efforts to get a scientific point of view inculcated in the minds of managers with whom he was actively associated, is probably the explanation of the vehemence and the arbitrary method of statement with which so many people came to associate his name. For the record of Mr. Taylor's fight with his superiors and his subordinates at Midvale, together with his later experiences at Bethlehem, constitutes a story of ruthless opposition and stupid inertia on the part of managers, and sullen obstinacy on the part of manual workers. No one but a man who conceived his task in terms of world-wide importance would have stood up against the treatment he received. In fact, in the fascinating biographical narrative which Mr. Frank B. Copley gives, there is no obvious explanation for the motives which kept Mr. Taylor at his original project. If it is a characteristic of greatness that the genius is borne on by an inner urge which seems to have no rational causal connection with immediate conditions, Mr. Taylor certainly qualifies among the great.

Mr. Copley does show clearly, however, the intellectual genesis of the group of ideas which have come to be known by the name of scientific management. And it seems to the reviewer a matter of profound significance that the conditions which started Mr. Taylor's mind working in its lifelong direction are still providing the main and central occasion for conflict and misunderstanding between manual workers and the rest of the community. This fact indicates how penetratingly Mr. Taylor went to the heart of the management problem on its human side. In a word, Mr. Taylor, because of his years of experience as an apprentice and manual worker, became convinced that the manual laborer was not doing in a day the amount of work which might fairly be expected of him. The impetus to his whole inquiry into managerial methods lay in his profound irritation at this condition of what he believed to be wholesale soldiering.

That he confronted this problem wisely will be realized if it is stated that today, thirty years after Mr. Taylor's contributions to management theory began to be made, the only plants or industries which are on the way to coping with the problem of securing a fair day's work are those which are utilizing the essence of the methods which he evolved.

It would be a mistake, however, to give the impression that Mr. Taylor viewed the problem of manual workers' reluctance to give a full day's work as one created by the workers or one for which they were themselves primarily to blame. The emphasis of his subsequent teaching always was that the utilization in the most effective way of the energies of the workers of an organization was a responsibility which required in a peculiar and in a wholly new way the use of the intellectual resources and working capacities of management. Indeed, Taylor found himself opposed repeatedly not alone to managers but to the banking and promoting interests. His disgust was outspoken with financiers whom he found interested only in profits which were quick and easy. Although on certain occasions he was fond of saying that the interests of the employer and the employe were identical, he also did not fail to point out in a number of cases, and with considerable vehemence, that the employer who had his eye on dividends alone was not in a mood to sympathize with the principles, methods and results for which he stood.

Looked at in retrospect, the birth of the ideas of scientific management seems obvious and logical enough. It started with the desire to have manual workers do a fair day's work. What, then, is a fair day's work? It is not simply the amount of work which is being done or even that which has been done by the faster workers. It is rather that amount of work which a reasonably rapid and conscientious worker can do without undue fatigue when he is trained to employ those methods and motions which after careful analysis and experiment are found to be the most expeditious and the most economical of time, energy and material. The determination of a fair day's work is thus to a considerable extent a matter for painstaking scientific inquiry—for thorough-going job analysis.

But such thorough-going analysis quickly reveals the fact that the maintenance of the machine equipment must be carefully provided for in advance; that the kind, quality and amount of raw material or parts to be assembled must be of a reasonably uniform and standardized character; that surrounding shop conditions in point of light, ventilation, humidity, etc., must be good. In other words, no statement can be made regarding a fair day's work at a given job that will hold true after the study has been made unless the surrounding conditions in terms of equipment, materials, and working conditions have also been brought under control and standardized. This at once leads to the building up of a procedure for the functionalizing of certain shop activities and for the controlling of the whole process of design, flow of materials, etc. And thus gradually evolved the whole procedure of planning, scheduling, routing, follow-up, and costing, which forms the nucleus of the technique of scientific management, so far as internal shop operation is concerned.

The development of an adequate technique to assure this systematizing and standardizing of procedure was merely a matter of time. And although the number of plants which during Taylor's lifetime or since have introduced this procedure in its entirety can probably be counted on the fingers of two hands, yet the fundamental notions of standardization of procedure, centralized control and functionalized staff departments, have come to be widely accepted as elements without which a management science would today hardly be conceivable. It is in this sense that the significance of the contribution of Mr. Taylor cannot easily be over-rated.

Management must always be both a science and in its application an art. And in so far as it is a science today, it owes more to Frederick W. Taylor than to any other one mind, both for the point of view and for the method which he urged. He became the apostle of the consistent use of the scientific method as applied to management, and he offered a body of tangible procedures that would make management scientific; and he thus became the initiator of what he rightly insisted was a revolutionary way of looking at the management problem.

On Taylor's contribution in the field of mechanical invention it is of less importance to dilate, although his creative talents were throughout his life turned toward the offering of inventions which were in the aggregate a distinct addition to the sum of human knowledge.

Much has been written and much is said by Mr. Copley, regarding Taylor's philosophy. In any strict

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