

A Critical Analysis of Scientific Management¹

Its Accomplishments, Shortcomings, and Future Obligations

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IN PRESENTING this paper I find myself in the accustomed position of being "between the devil and the deep sea." I am peculiarly fortunate in that I am constantly being admonished as regards the Taylor philosophy of management by two groups—by one for being too "liberal," by the other for being too "orthodox"! I hope that the friendly protests I constantly receive from these groups have at least resulted in a balanced viewpoint. The following discussion is offered not primarily as a representative of any group, but as the personal observations of one who, in preparing this paper, desires to be neither modernist nor fundamentalist.

I. Some Prevalent Misunderstandings of Scientific Management

It is a little curious in view of the very considerable literature on the subject that the movement that we are discussing continues to be so persistently misunderstood. I believe we cannot do better than turn back occasionally to the fundamentals as expressed in the writings of Taylor in an effort to clear up not only what Scientific Management is *not*, but also to see what is the real essence of its philosophy. Mr. Taylor has constantly emphasized, for instance, that it is *not* any "system" or efficiency device or a new scheme of paying men, or time study, or functional foremanship;² that "the mechanism . . . must not be

¹Paper presented at a meeting of the Taylor Society, New York, January 24, 1924.

²Hearings before Special Committee of the House of Representatives to Investigate the Taylor and Other Systems of Shop Management, H. R. 90, F. W. Taylor's Testimony, January and February, 1912, page 1387. "Scientific management is not any efficiency device . . . nor is it any bunch or group of efficiency devices. It is not a new system of figuring costs; it is not a new scheme of paying them; . . . it is not holding a stop watch on a man and writing things down about him; . . . it is not the printing and ruling and unloading of a ton or two of blanks on a set of men and saying, 'Here's your system, go to it.' It is not divided or functional foremanship; it is not any of the devices which the average man calls to mind when scientific management is spoken of . . . I am not sneering at cost-keeping systems, at time study, at functional foremanship, nor at any new and

mistaken for the true essence or underlying philosophy" because "precisely the same mechanism will in one case produce disastrous results and in another the most beneficial;"³ that "Scientific Management is *not* a theory" but that "it is the practical result of a long evolution."⁴ He constantly combatted the serious and persistent misunderstanding that Scientific Management may be bought, or copied, and installed in a business in much the same fashion that a new process for making steel may be—a misunderstanding for which, as will be discussed later, I am afraid some of our own practices have been partially to blame. Mr. Taylor says: "The essence of Scientific Management consists in the application of certain broad, general principles, and the particular way in which these prin-

improved scheme of paying men, nor at any efficiency devices, if they are really devices that make for efficiency. I believe in them; but what I am emphasizing is that these devices in whole or in part are not scientific management; they are useful adjuncts to scientific management, so are they also useful adjuncts to other systems of management"

³"Principles of Scientific Management," page 128: "The mechanism of scientific management must not be mistaken for its essence or underlying philosophy. Precisely the same mechanism will in one case produce disastrous results and in another the most beneficial. The same mechanism which will produce the finest results when made to serve the underlying principles of scientific management will lead to failure and disaster if accompanied by the wrong spirit in those who are using it." Ibid, page 28: "Most of the readers of these (earlier papers) have mistaken the mechanism for the true essence. Scientific management fundamentally consists of certain broad general principles, a certain philosophy, which can be applied in many ways, and a description of what any one man or men may believe to be the best mechanism for applying these general principles would in no way be confused with the principles themselves."

⁴Taylor says, Cleveland Advertising Club, March, 1915 (Copley I, page 348): "Scientific Management at every step has been an evolution, not a theory. In all cases the practice has preceded the theory, not succeeded it. . . . Every new element has had to fight its way against the elements that preceded it, and prove itself better." And again, (Hearings, page 1415-16): "Far from being a theory . . . the theory of Scientific Management has only come to be a matter of interest and of investigation during the past few years, whereas this type of management itself has been in process of evolution during a period of about thirty years." . . . it is the practical result of a long evolution."

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principles are applied is a matter of entirely subordinate detail."⁵

Another fallacious idea for which no one in particular seems to be to blame (unless it be what Sheldon has called Scientific Management's "profligate pursuer, 'efficiency'"⁶) is that all one needs do to have Scientific Management is to introduce some sort of incentive payment scheme. Taylor's followers, largely without avail, have constantly reiterated his position on this point, as for instance, when he says: "Under Scientific Management the particular pay system adopted is of minor consequence, and in many of our establishments we have six different pay systems all going on at the same time . . ." He furthermore emphasized the "paramount importance" of standardization as a basis of incentive payment.⁸

So much very briefly for some of the things which Scientific Management is *not*. Although Mr. Taylor emphasized the fact that the theory and philosophy was given almost no attention until long after its

⁵"Shop Management," paragraph 290: "The principles and details which are admirable in one type of management have no place whatever in another."

In a letter to Holden A. Evans, Taylor wrote December 2, 1919 (Copley II, page 309): "The essence of modern scientific management consists in the application of certain broad general principles, and the particular way in which these principles are applied is a matter of entirely subordinate detail . . . As you know, I personally believe that certain methods of applying these general principles are better than others . . . this, however, I look upon as entirely subordinate to the general principles and among those who have succeeded me in the business of introducing Scientific Management, there is not one who uses the same methods in any two successive establishments. The methods must in all cases be, to a considerable extent, modified to suit the special conditions and needs of each establishment."

Taylor at Cleveland Advertising Club, November 3, 1915 (Copley I, page 348): "All the men that I know of who are connected with Scientific Management are ready to abandon any schemes, any theory, in favor of anything else that can be found that is better. There is nothing in Scientific Management that is fixed."

⁶Bulletin of the Taylor Society, December 1923, Vol. 8, No. 6, p. 209.

⁷Taylor says (Harvard Business School Lecture): ". . . the average manager quite firmly believes that the whole art of managing men practically consists in the adoption of one or the other of these pay systems. Under Scientific Management, however, the particular pay system adopted is of minor consequence, and in many of our establishments we have six different pay systems all going on at the same time, each one having its especial advantages under certain conditions and at certain stages in the development . . ."

Furthermore in the "Principles of Scientific Management," page 34, Taylor writes: "Under Scientific Management . . . the particular pay system which is adopted is merely one of the subordinate elements."

And in "A Piece Rate System," paragraph 53, we find: "Whether cooperation, the differential plan, or some other form (of incentive payment) be chosen . . . there are

development in numerous industries, it is rather significant that of all who have attempted to tell of what this movement really consists, we still turn back to Mr. Taylor for the most complete and convincing description of its theory and principles. It is important to note that his very first effort was to harmonize the interests of the workmen and the management; he gives this as the first object he had in mind when he was made foreman at Midvale.⁹

The importance in which he held the matter of mutuality of interest is made clear when he says: "Scientific Management has for its very foundation the firm conviction that the true interests of the two (employee and employer) are one and the same; that prosperity for the employee cannot exist through a long term of years unless it is accompanied by prosperity for the employer, and vice versa."¹⁰

As against these quotations from Mr. Taylor it is interesting to see what organized labor has to say in this connection: "It is not the mission of industrial groups to clash and struggle against each other Industry must organize for service . . . for justice to all who participate."¹¹

In its essence, then, Taylor conceived the movement which he started to involve a "complete mental revolution on the part of the working man . . . and on the part of those on the management's side . . . both as to their duty to cooperate in producing the largest

certain fundamental facts and principles which must be recognized and incorporated in any system of management, before true and lasting success can be attained, and most of these facts and principles will be found to be not far removed from what the strictest moralists would call justice."

⁹"Piece Rate System," paragraph 54: ". . . not the least of the benefits of elementary rate-fixing are the indirect results."

And in paragraph 76: ". . . the rate-fixing department has shown the necessity of carefully systematizing all of the small details in the running of each shop . . . These details which are usually regarded as of comparatively small importance, are of paramount importance in obtaining the maximum output, and . . . require the most careful and systematic study and attention in order to insure uniformity and fair and equal chance for each workman."

¹⁰"Principles of Scientific Management," page 52-53: "Soon after being made foreman . . . he (F. W. Taylor) decided to make a determined effort to in some way change the system of management so that the interests of the workmen and the management should become the same, instead of antagonistic."

This attitude is further reflected in the opening sentence of the same book: "The principle object of management should be to secure the maximum prosperity for the employer, coupled with the maximum prosperity for each employee."

¹¹"The Principles of Scientific Management," p. 10.

¹²Resolutions adopted at the October, 1923, meeting of the American Federation of Labor, held at Portland, Oregon.