

it is doing the same with Scientific Management. Our business is not to condemn, but to learn; not to stand aside and criticise imaginary evils, but to get inside and help extend the demonstrated good.

C. BERTRAND THOMPSON.

MR. CADBURY'S REPLY.

I have to thank the Editor of the *Sociological Review* for offering me space in which to reply to the points raised in the discussion of my paper on Scientific Management. There is no necessity for my reply to be a long one. I do not desire to take up any dogmatic attitude, and my purpose is achieved in eliciting the interesting and instructive discussion on the points raised.

Mr. C. G. Renold and Mr. W. H. Jackson agree with me that Scientific Management is bound to become general in time, and that it is our business "to study how to turn it to the best use of the community." They also agree that specialization will be carried much further than it has been in the past, and one result will be that the work that skilled men used to do will be given over to semi-skilled or unskilled men. On the other hand, the skilled men, so displaced, tend to be absorbed in the ranks of inspectors, machine-setters, time-study men, etc. But Mr. C. G. Renold himself says—and I agree with him: "Whether this relative redistribution of men and work will in the long run meet the objection (of increasing monotony and lessening skill and initiative) it is yet too early to say." It seems, however, that on the whole, the tendency is to develop semi-skilled men who will occupy a better position than that now occupied by the unskilled labourer, but which will be much inferior to that of the skilled artisan of the present day; and while it will always be possible for an unskilled labourer to rise even to the ranks of the inspector, etc., yet the general result will be a class of semi-skilled workers, whose work will be highly specialized and monotonous, and which demands little or no initiative, since thinking and initiative are the function of the management. We must remember that the trained skill and initiative which distinguishes an artisan from an unskilled labourer has a money value, and under Scientific Management this capital passes away from the workman to the management.

Further, as Mr. Hazell points out, there are large fields of employment which "are so monotonous that there is not sufficient scope for individual brain power in them."

Mr. Hobson and Mr. Cole also emphasize another important point that must be kept in mind. Excessive labour and other damages to workers may in some cases be profitable to employers. "Under Scientific Management there is no guarantee that only those economies which involve no increase in human costs will be adopted." It must be admitted that in any wages system there can never be complete identity of interest, between employer and employed.

In dealing with the question of wages, Mr. Jackson and Mr. Renold emphasize an important point, when they show that the standardization of processes, operations and detailed cost systems will make the free and open discussion of wages easier. The question is, however, whether employers generally will recognize the expediency of making use of this fact by dealing with the workers collectively in the settlement of wages rates. If the employers do adopt this attitude, I agree that probably there will be a general and permanent increase of wages among the lower paid, since the workers would not be satisfied otherwise. But this involves a great change in the opinion and methods of employers. Mr. G. D. H. Cole, for example, doubts if under the present competitive system, such a policy is possible for more than a minority of employers, and this, I think, is probably the case.

Mr. F. W. Taylor makes an interesting contribution to the discussion. He states that, as a matter of fact, fears are quite groundless "that the assignment of daily tasks to workmen may lead to great nervous strain," or that the system "reduced the workman to a living tool, and may lead him to expend his last ounce of energy while initiative and judgment are eliminated." In practice, says Mr. Taylor, in the shops where the full system of Scientific Management is in vogue, the very opposite is the reality. To this I merely wish to reply that as yet, according to Mr. Taylor himself,¹ there are only some 200,000 people working under this system in the United States—a very insignificant number when compared with the total workmen of the country. Further, under any system giving a premium on output, the average workers, especially in the case of women, tend to overdrive themselves. I stated in my paper that both Mr. Taylor and Mr. Gantt point out

1. *Journal of the Efficiency Society*, New York, September 19, 1914, p. 22.

that it is essential that over-work of the employee must be avoided, and that the system must aim at the best interests of the employee as well as that of the employer. But Mr. Taylor himself emphasizes ¹ the difficulty, if not impossibility, of persuading the average board of directors to appreciate the point of view on these matters adopted by himself. Again, I was quoting Mr. Taylor himself when I said that "the most prominent single element in modern scientific management is the task idea."² The task of every workman is fully planned out, and each man usually receives written instructions describing in the minutest detail the work which he is to accomplish, as well as the means to be used in doing it. It is stated that, even in crude and elementary unskilled work, the science and method are quite beyond the man who is doing it. And this is equally true of the skilled mechanic. Taking the handling of pig-iron as an example of unskilled work, we are told that one of the first requirements of a man for this work is that "he shall be so stupid and so phlegmatic that he more nearly resembles in his mental make-up the ox than any other type."³ Again, it is stated that "It is only through *enforced* standardization of methods, *enforced* adoption of the best implements and working conditions, and *enforced* co-operation that this faster work can be assured."⁴

I would also like to point out that Mr. Taylor did not discuss the relation of his system to trade-unionism. There is a difference between English conditions and those of the United States. The policy pursued by Mr. Gantt and Mr. Taylor, of dealing with the workmen one by one, would be foredoomed to failure. Already the unions are beginning to discuss the problems raised by various aspects of Scientific Management. It is not merely the question of wages that interests them, but the status of the worker and the trade-union under the system, and such questions as the control of the workshop. In the *Workers' Union Journal* (Midland Edition), for example, there has been running in recent issues a series of articles on Scientific Management and the workers' attitude towards it; and as I stated previously, the Amalgamated Society of Engineers voted against the premium-bonus system, by a majority of six to one, and a committee of the Trade Union Congress has also condemned the system without qualification. I mention these facts to show that we cannot argue

1. *Journal of the Efficiency Society*, New York, September 19, 1914, p. 22.

2. *Principles of Scientific Management*, p. 39.

3. *Principles of Scientific Management*, p. 59.

4. *Ibid.*, p. 83.

that what obtains in the United States could necessarily be done here.

I have read with interest the article by Mr. Bertrand Thompson, the proof of which arrived immediately after I had written the above reply. He has stated the case for Scientific Management most ably, but after careful reading I do not see that he has raised new fundamental points; I had already seen the 1913 edition of Gantt's *Work, Wages and Profits*.

I quite appreciate the difference between "strenuosity and efficiency" which is Mr. Thompson's first point. But as above stated, it is impossible to prevent workpeople, especially girls, at times over-driving themselves. And the problem in front of us is not merely the system of Scientific Management applied under more or less enlightened control, and dealing with a very insignificant amount of the total output of the country, where its limited application gives a kind of monopoly profit, but the system extended into all works, with competition pressing keenly upon all those engaged in it.

Men and women cannot be divided into the clean-cut divisions that Mr. Thompson suggests when discussing monotony. There are extreme cases where a person is so mentally sluggish that he would not feel the monotony of the most specialized and automatic task. But my experience with the average unskilled labourer, both boys and girls, is that they show a decided power of mental development when their education proceeds on good lines. It is just because I refuse to accept the division of the workpeople into types of mentally alert and mentally inactive, that I do not agree with any argument based upon such a supposed division. And any system that tends to make such types is anti-social. The instance quoted by Mr. Thompson, *i.e.*, of machine sewing, does not strike me as the most extreme example of monotony. There are many jobs even more automatic, *e.g.*, the picking out of the spoilt balls by the girl inspectors,¹ and many operations with light presses in metal work. We must not so readily discount the nervous effect of such things as extreme noise. It is true that the din sinks below the threshold of consciousness at the time, but one has hardly the right to make the assumption that the nervous organism is so adaptable that there is no strain and no deteriorating effect upon the nervous system. I agree that it is a remedy to regulate the hours of work so that mental fatigue cannot supervene, but the fact that there is

1. Taylor's *Scientific Management*, p. 86.

a remedy does not disprove the existence of the evil, but rather the opposite.

In respect of Mr. Thompson's third point, I have already given the reasons why I think that the system, unless carefully watched, will tend to destroy the skill, initiative, and judgment of the individual workman. The ground need not be covered again. That it is possible to introduce methods which will tend to alleviate this evil is obvious, as we have proved to some extent in our own factory. And the instances given by Mr. Thompson of training men to do different specialized jobs, in turn, deserve most careful consideration.

I agree with his fourth point, that it is no criticism of the system to assert that it does not of itself solve the question of the distribution of wealth, and that on the other hand, there is this to be said, that the system is an advance in efficiency and therefore means larger output and increased national dividend. If I may say so, that was not the line of my criticism. It cannot be expected that industrial engineers developing the principles and methods of industrial organization and output can keep in view all the aspects of the larger and more complex problem of social and political organization. But at the same time, any system of industrial organization must be questioned how far it coincides with, or runs counter to, definite social and political tendencies that are developing. I have pointed out above (and in this I am dealing with Mr. Thompson's last point) that Mr. Taylor and Mr. Gantt have been definitely hostile to trade-unionism and collective bargaining, and that they seemed to imagine that their system would result in the elimination of trade-unionism, for the simple reason that they provided a stronger motive of self-interest for the workman. That this is a correct description of their attitude Mr. Thompson admits, and when he points out that in some instances the policy and ideas of Mr. Taylor on this point are not followed, and that the system is not necessarily antagonistic to collective bargaining, he does not answer my criticisms of Mr. Taylor, but justifies them. I see no reason why the system, possibly modified on certain lines, should not be developed with and through the assistance of the trade-unions. My opinion is, that any other policy pursued in this country would be foredoomed to failure.

EDWARD CADBURY.