

2. A Student's View of "Soldiering," 1931

The worker upon entering industry is, of course, first aware of the direct pressure exerted by his fellow-workmen. In fact, a new worker will often practice restriction for a long time for no other reason than that the working group insists upon it. Later, he usually becomes familiar with the underlying causes, the indirect factors which make "regulation," in the eyes of his fellows, necessary.

The cases which follow indicate how potent a factor for restriction the pressure of the group may be. . . .

"Red," a beginner in industry, was working on an assembly line in a phonograph factory, producing small motors, on hourly rate. The line was turning out an average of only 30 motors a day. "Red" found it so easy to keep up his part of the work that he would pile up parts ahead of the next worker in the line. He would then move over and help perform the next operation until the other worker caught up. This went on until "Red" was shifted by the foreman to the final operation in the assembly line. Here he was in a position to work as fast as he liked so far as passing on his completed work was concerned, but he was constantly waiting for the man behind. In order not to appear slow this man had to put through a few more parts, which had its effect all along the assembly line. The process of speeding up developed slowly until the gang, which formerly put through about 30 motors a day, was turning out an average of 120 a day. To "Red's" surprise, the men objected strenuously to this increase, argued with him and even threatened to "meet him in the alley" unless he slowed down his production. "Red" said that when production got up above 100 motors a day the threats became so insistent he began to fear "they might really mean something." However, "Red's" problem was "solved" by his transfer to another department. . . .

Tex, a southern boy, started to work for a mining company. He wanted to go into the mines, but he was too young to be put underground; so he was given a job in the electrical department running a coil-winding machine. He had never run such a machine, but found it quite easy to operate after he had been "shown how." The average output of the coils he was running had been 72 a day. When he began working, Tex knew no better than to make all the coils he could. The first day everything was new, but at the end of the second day he found that he had turned out 90 coils, 18 over the previous average output. If a new boy could produce as many as that on his second day, a much larger number might have been possible as he became better acquainted with his machine. Tex never found out what he might have done, however. He was frightened out of such an effort by two of the older workmen who approached him at the end of that second day and demanded, in a threatening manner, that he cut down his production.

On other jobs with this company, where Tex worked for several years, he encountered similar pressure. When he was given employment underground he was put to work with Tom, an experienced mine-electrician. One of their tasks was to get the material ready, haul it into the mine and put up about 600 feet of mine

trolley-wire. The preparations for such a job usually took about a half day. Tex suggested a way in which this time could be cut in half. He was delighted when Tom fell in readily with his suggestion. The material was prepared, hauled into the mine and under the new plan they were ready to put it in place before the morning was half gone. Then Tex got a shock! Tom, instead of going right ahead and putting up the wire, quit work and ordered Tex to do the same. They spent the time "just fooling around" until the hours which had been saved were used up unproductively. . . .

A messenger boy received a lesson in the principle of "cooperation" on his first job. The duties of the messengers took them to offices and shops where interesting people were at work and where interesting things went on. When he joined the group, the other messengers had a habit of stopping here and there on their rounds. This custom had established a sort of standard time for each round. The new boy found that he could make his rounds a lot faster than was usual if he did not stop to chat with the stenographers and watch the mechanics. The other boys soon explained to him that if he hurried from place to place they would have to do the same. This would necessitate giving up the interesting visits to which they were accustomed.

During the first six weeks of Ellen's employment in a large department store, she was at the bargain tables. Sometimes the merchandise sold itself so fast she could hardly handle the customers; at other times, her table would contain such unattractive goods that, try as she would, she could not interest any one. To keep either the extremely slow or the extremely fast pace was very hard for Ellen, and at times her tallies showed alarmingly small totals. She would probably have been dropped if her fellow-workers had not helped her out by sharing their sales with her.

Some time later Ellen was transferred to another department. Here, freed from the excessive peaks and lags, she made a sales record for the department. As a result, the other girls were censured by the buyer for not being able to keep up with her. She was later put at the head of a section and needed the cooperation of the girls. Accordingly, she split her sales with them so that they would not be criticized when their tallies were compared with hers. This plan worked all right until Ellen decided that she was foolish to work on that basis. She began to restrict her efforts, rather than give away the result of her extra work.

3. Frederick Winslow Taylor Explains the Principles of Scientific Management, 1916

By far the most important fact which faces the industries of our country, the industries, in fact, of the civilized world, is that not only the average worker, but nineteen out of twenty workmen throughout the civilized world firmly believe that it is for their best interests to go slow instead of to go fast. They firmly believe that it is for their interest to give as little work in return for the money that they get as is practical. The reasons for this belief are two-fold, and I do not believe that the workingmen are to blame for holding these fallacious views.

If you will take any set of workmen in your own town and suggest to those men that it would be a good thing for them in their trade if they were to double their output in the coming year, each man turn out twice as much work and become twice as efficient, they would say, "I do not know anything about other people's trades; what you are saying about increasing efficiency being a good thing may be good for other trades, but I know that the only result if you come to our trade would be that half of us would be out of a job before the year was out." That to the average workingman is an axiom; it is not a matter subject to debate at all. And even among the average business men of this country that opinion is almost universal. They firmly believe that that would be the result of a great increase in efficiency, and yet directly the opposite is true. . . .

The . . . reason why the workmen of this country and of Europe deliberately restrict output is a very simple one. . . . If, for example, you are manufacturing a pen, let us assume for simplicity that a pen can be made by a single man. Let us say that the workman is turning out ten pens per day, and that he is receiving \$2.50 a day for his wages. He has a progressive foreman who is up to date, and that foreman goes to the workman and suggests, "Here, John, you are getting \$2.50 a day, and you are turning out ten pens. I would suggest that I pay you 25 cents for making that pen." The man takes the job, and through the help of his foreman, through his own ingenuity, through his increased work, through his interest in his business, through the help of his friends, at the end of the year he finds himself turning out twenty pens instead of ten. He is happy, he is making \$5, instead of \$2.50 a day. His foreman is happy because, with the same room, with the same men he had before, he has doubled the output of his department, and the manufacturer himself is sometimes happy, but not often. Then someone on the board of directors asks to see the payroll, and he finds that we are paying \$5 a day where other similar mechanics are only getting \$2.50, and in no uncertain terms he announces that we must stop ruining the labor market. We cannot pay \$5 a day when the standard rate of wages is \$2.50; how can we hope to compete with surrounding towns? What is the result? Mr. Foreman is sent for, and he is told that he has got to stop ruining the labor market of Cleveland. And the foreman goes back to his workman in sadness, in depression, and tells his workman, "I am sorry, John, but I have got to cut the price down for that pen; I cannot let you earn \$5 a day; the board of directors has got on to it, and it is ruining the labor market; you ought to be willing to have the price reduced. You cannot earn more than \$3 or \$2.75 a day, and I will have to cut your wages so that you will only get \$3 a day." John, of necessity accepts the cut, but he sees to it that he never makes enough pens to get another cut. . . .

The Development of Scientific Management

There has been, until comparatively recently, no scheme promulgated by which the evils of rate cutting could be properly avoided, so soldiering has been the rule.

Now the first step that was taken toward the development of those methods, of those principles, which rightly or wrongly have come to be known under the name of scientific management—the first step that was taken in an earnest endeavor to remedy the evils of soldiering; an earnest endeavor to make it unnecessary for workmen to be hypocritical in this way, to deceive themselves, to deceive their employers,

to live day in and day out a life of deceit, forced upon them by conditions—the very first step that was taken toward the development was to overcome that evil. . . .

What is scientific management? It is no efficiency device, nor is it any group or collection of efficiency devices. Scientific management is no new scheme for paying men, it is no bonus system, no piece-work system, no premium system of payment; it is no new method of figuring costs. It is no one of the various elements by which it is commonly known, by which people refer to it. It is not time study nor man study. It is not the printing of a ton or two of blanks and unloading them on a company and saying, "There is your system, go ahead and use it." Scientific management does not exist and cannot exist until there has been a complete mental revolution on the part of the workmen working under it, as to their duties toward themselves and toward their employers, and a complete mental revolution in the outlook of the employers, toward their duties, toward themselves, and toward their workmen. And until this great mental change takes place, scientific management does not exist. Do you think you can make a great mental revolution in a large group of workmen in a year, or do you think you can make it in a large group of foreman and superintendents in a year? If you do, you are very much mistaken. All of us hold mighty close to our ideas and principles in life, and we change very slowly toward the new, and very properly too.

Let me give you an idea of what I mean by this change in mental outlook. If you are manufacturing a hammer or a mallet, into the cost of that mallet goes a certain amount of raw materials, a certain amount of wood and metal. If you will take the cost of the raw materials and then add to it that cost which is frequently called by various names—overhead expenses, general expense, indirect expense; that is, the proper share of taxes, insurance, light, heat, salaries of officers and advertising—and you have a sum of money. Subtract that sum from the selling price, and what is left over is called the surplus. It is over this surplus that all of the labor disputes in the past have occurred. The workman naturally wants all he can get. His wages come out of that surplus. The manufacturer wants all he can get in the shape of profits, and it is from the division of this surplus that all the labor disputes have come in the past—the equitable division.

The new outlook that comes under scientific management is this: The workmen, after many object lessons, come to see and the management comes to see that this surplus can be made so great, providing both sides will stop their pulling apart, will stop their fighting and will push as hard as they can to get as cheap an output as possible, that there is no occasion to quarrel. Each side can get more than ever before. The acknowledgement of this fact represents a complete mental revolution.

What Scientific Management Will Do

I am going to try to prove to you that the old style of management has not a ghost of a chance in competition with the principles of scientific management. Why? In the first place, under scientific management, the initiative of the workmen, their hard work, their good-will, their best endeavors are obtained with absolute regularity. . . . That is the least of the two sources of gain. The greatest source of gain under scientific management comes from the new and almost unheard-of duties and burdens which are voluntarily assumed, not by the workmen, but by the men on the management side. . . . These new duties, these new burdens undertaken by

the management have rightly or wrongly been divided into four groups, and have been called the principles of scientific management.

The . . . first of the new burdens which are voluntarily undertaken by those on the management side is the deliberate gathering together of the great mass of traditional knowledge which, in the past, has been in the heads of the workmen, recording it, tabulating it, reducing it in most cases to rules, laws, and in many cases to mathematical formulae, which, with these new laws, are applied to the co-operation of the management to the work of the workmen. This results in an immense increase in the output, we may say, of the two. The gathering in of this great mass of traditional knowledge, which is done by the means of motion study, time study, can be truly called the science. . . .

The next of the four principles of scientific management is the scientific selection of the workman, and then his progressive development. It becomes the duty under scientific management of not one, but of a group of men on the management side, to deliberately study the workmen who are under them; study them in the most careful, thorough and painstaking way; and not just leave it to the poor, overworked foreman to go out and say, "Come on, what do you want? If you are cheap enough I will give you a trial."

That is the old way. The new way is to take a great deal of trouble in selecting the workmen. The selection proceeds year after year. And it becomes the duty of those engaged in scientific management to know something about the workmen under them. It becomes their duty to set out deliberately to train the workmen in their employ to be able to do a better and still better class of work than ever before, and to then pay them higher wages than ever before. This deliberate selection of the workmen is the second of the great duties that devolve on the management under scientific management.

The third principle is the bringing together of this science of which I have spoken and the trained workmen. I say bringing because they don't come together unless some one brings them. Select and train your workmen all you may, but unless there is some one who will make the men and the science come together, they will stay apart. The "make" involves a great many elements. They are not all disagreeable elements. The most important and largest way of "making" is to do something nice for the man whom you wish to make come together with the science. Offer him a plum, something that is worthwhile. There are many plums offered to those who come under scientific management—better treatment, more kindly treatment, more consideration for their wishes, and an opportunity for them to express their wants freely. That is one side of the "make." An equally important side is, whenever a man will not do what he ought, to either make him do it or stop it. If he will not do it, let him get out. I am not talking of any mollicoddle. Let me disabuse your minds of any opinion that scientific management is a mollicoddle scheme.

I have a great many union friends. I find they look with especial bitterness on this word "make." They have been used to doing the "making" in the past. That is the attitude of the trade unions, and it softens matters greatly when you can tell them the facts, namely, that in our making the science and the men come together, nine-tenths of our trouble comes with the men on the management side in making them do their new duties. I am speaking of those who have been trying to change from the old system to the new. . . .

The fourth principle is the plainest of all. It involves a complete redivision of the work of the establishment. Under the old scheme of management, almost all of the work was done by the workmen. Under the new, the work of the establishment is divided into two large parts. All of that work which formerly was done by the workmen alone is divided into two large sections, and one of those sections is handed over to the management. They do a whole division of the work formerly done by the workmen. It is this real cooperation, this genuine division of the work between the two sides, more than any other element which accounts for the fact that there never will be strikes under scientific management. When the workman realizes that there is hardly a thing he does that does not have to be preceded by some act of preparation on the part of management, and when that workman realizes when the management falls down and does not do its part, that he is not only entitled to a kick, but that he can register that kick in the most forcible possible way, he cannot quarrel with the men over him. It is team work. There are more complaints made every day on the part of the workmen that the men on the management side fail to do their duties than are made by the management that the men fail. Every one of the complaints of the men have to be heeded, just as much as the complaints from the management that the workmen do not do their share. That is characteristic of scientific management. It represents a democracy, co-operation, a genuine division of work which never existed before in this world.

4. An A.F.L. View of Women Workers in Industry, 1897

The invasion of the crafts by women has been developing for years amid irritation and injury to the workman. The right of the woman to win honest bread is accorded on all sides, but with craftsmen it is an open question whether this manifestation is of a healthy social growth or not.

The rapid displacement of men by women in the factory and workshop has to be met sooner or later, and the question is forcing itself upon the leaders and thinkers among the labor organizations of the land.

Is it a pleasing indication of progress to see the father, the brother and the son displaced as the bread winner by the mother, sister and daughter?

Is not this evolutionary backslide, which certainly modernizes the present wage system in vogue, a menace to prosperity—a foe to our civilized pretensions? . . .

The growing demand for female labor is not founded upon philanthropy, as those who encourage it would have sentimentalists believe; it does not spring from the milk of human kindness. It is an insidious assault upon the home; it is the knife of the assassin, aimed at the family circle—the divine injunction. It debars the man through financial embarrassment from family responsibility, and physically, mentally and socially excludes the woman equally from nature's dearest impulse. Is this the demand of civilized progress; is it the desire of Christian dogma? . . .

Capital thrives not upon the peaceful, united, contented family circle; rather are its palaces, pleasures and vices fostered and increased upon the disruption, ruin