Creative Impulse in Industry by Helen Marot

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CREATIVE IMPULSE IN INDUSTRY

_A Proposition for Educators_

BY

HELEN MAROT

1918

TO

CAROLINE PRATT

WHOSE APPRECIATION OF EDUCATIONAL FACTORS IN THE PLAY WORLD OF CHILDREN, INTENSIFIED FOR THE AUTHOR THE SIGNIFICANCE OF THE GROWTH PROCESSES IN INDUSTRIAL AND ADULT LIFE.

PREFACE

The Bureau of Educational Experiments is a group of men, and women who are trying to face the modern problems of education in a scientific spirit. They are conducting and helping others to conduct experiments which hold promise of finding out more about children as well as how to set up school environments which shall provide for the children's growth. From these experiments they hope eventually may evolve a laboratory school.

Among their surveys the past year, one by Helen Marot has resulted in this timely and significant book. The experiment which is outlined at the close seems to the Bureau to be of real moment,—one of which both education and industry should take heed. They earnestly hope it may be tried immediately. In that event, the Bureau hopes to work with Miss Marot in bringing her experiment to completion.

THE BUREAU OF EDUCATIONAL EXPERIMENTS, 16 West Eighth Street, New York City.

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CREATIVE IMPULSE IN INDUSTRY

INTRODUCTION

A friend of mine in describing the Russian people as he observed them in their present revolution said it was possible for them to accept new ideas because they were uneducated; they did not, he said, labor under the difficulty common among educated people of having to get rid of old ideas before they took on new ones. I think what he had in mind to say that it is difficult to accept new ideas when your mind is filled with ideas which are institutional. The ideas which come out of formal education, out of the schools, out of books, are ideas which have been stamped as the true and important ones; many of them are, as they have proved their worth in service. But as they represent authority, they pass into a people's mind with the full weight of an accepted fact. The schools, the colleges, and the books are not responsible primarily for the fixed ideas; every established institution contributes fixed ideas as well as fixed customs and rules of action. The schools and colleges circulate and interpret them. The movement for industrial education in the United States is an illustration of this.

The ideas which we find there have not sprung from schools or colleges but from industry. The institution of industry, rather than the institution of education, dominates thought in industrial education courses. It is the institution of industry as it has affected the life of every man, woman and child, which has inhibited educational thought in conjunction with schemes for industrial schools. No established system of education or none proposed is more circumscribed by institutionalized thought than the vocational and industrial school movement.

Educators have opposed the desire of business to attach the schools to the industrial enterprise. They have rightly opposed it because industry under the influence of business prostitutes effort. Nevertheless, hand in hand with industry, the schools must function; unattached to the human hive they are denied participation in life. Promoters of industrial education are hung up between this fact of prostituted industry and their desire to establish the children's connection with life. They have tried to meet opposing interests; they have not recognized all the facts because the facts were conflicting, and their minds as well as their interests, institutionally speaking, were committed to both.

This was the impasse we had apparently reached when the war occurred; it is where we still are. But ahead of us, sometime, the war will end and we shall be called then to face a period of reconstruction. The reconstruction will center around industry. The efficiency with which a worker serves industry will be the test of his patriotic fervor, as his service in the army is made the test during this time of war. All institutions will be examined and called upon to reorganize in such ways as will contribute to the enterprise of raising industrial processes to the standard of greatest efficiency.

The standard of mechanical efficiency as it was set by Germany was one of refined brutality. During the progress of the war, the significance of that standard is being grafted into the consciousness of the common people of those nations which have opposed Germany in arms. It is the industrial efficiency of Germany, uninhibited by a sense of human development that has
made her victories possible. It is that efficiency which has kept a large part of the world on the
defensive for over three and a half years. Germany's military strategy is, in the main, her
industrial strategy; it represents her efficiency in turning technology to the account of an imperial
purpose.

But those organizations of manufacturers and business politicians who believe that the same
schemes of efficiency will function in America will call upon the people after the war, it is safe to
predict, to emulate the methods which have given Germany its untoward strength. While it is
these methods which have made much hated Germany a menace to the world and while the
menace is felt by our own people, the significance of the methods is but vaguely realized. It is
probable that after the war it will be said that it was not the German methods which were
objectionable, but that it was their use in an international policy. Before the time for
reconstruction comes, I hope we shall discover how intrinsically false those methods are; and
how untrue to the growth process is the sort of efficiency Germany has developed. I hope also
that we shall realise that a policy of paternalism has no place in the institutional life of our own
country. Before the war these German methods bore the character of high success, and they
had a large following in this country. There are indeed many thousands of men and women in
the United States, who, while giving all they most care for, for the prosecution of the war against
Germany still support industrial and political policies and dogmas which are in spirit essentially
Prussian. The professional Reformer here in America is not even yet fully conscious that
German paternalism (a phase of German efficiency) is the token of an enslaved people.

The German educational system as much if not more than its other imperial schemes has been
instrumental in developing the German brand of industrial efficiency. The perfection in Germany
of its technological processes is made possible as the youth of the country has been
consecrated and sacrificed to the development of this perfection in the early years of school
training. Parents contribute their children freely to an educational system which fits them into an
industrial institution which has an imperial destiny to fulfill. Each person's place in the life of the
nation is made for him during his early years, like a predestined fact.

American business men before the war appreciated the educational system which made people
over into workers without will or purpose of their own. But the situation was embarrassing as
these business men were not in a position to insist that the schools, supported by the people,
should prepare the children to serve industry for the sake of the state, while industry was
pursued solely for private interest. Their embarrassment, however, will be less acute under the
conditions of industrial reconstruction which will follow the war. Then as patriots, under the
necessity of competing with Germany industrially, they will feel free to urge that the German
scheme of industrial education, possibly under another name, be extended here and adopted as
a national policy. In other words as Germany has evolved its methods of attaining industrial
efficiency, and as the schools have played the leading part in the attainment, the German
system of industrial education, private business may argue, should be given for patriotic
reasons full opportunity in the United States. If the German system were introduced here, of
course it is not certain that it could deliver wage workers more ready and servile, less single-
purposed in their industrial activity than they are now. It was in Germany a comparatively simple
matter for the schools to make over the children into effective and efficient servants, for, as
Professor Veblen explains, the psychology of the German people was still feudal when the
modern system of industry, with its own characteristic enslavement, was imposed, ready-made,
upon them; the German, people unlike the Anglo-Saxon had not experienced the liberating
effects of the political philosophy which developed along with modern technology in both
First, then, it is not certain that the system of German industrial education would succeed; and, second, if it did succeed it is not the sort of education that America wants.

America wants industrial efficiency, it must have efficient workers if it holds its place among nations, and American people will prove their efficiency or their inefficiency as they are capable of using the heritage which industrial evolution has given the world. But what shall we use this efficiency for? For the sake of the heritage? For the sake of business? For the sake of Empire?

Business knows very clearly why it wants it, but as a rule most of us are not clearly conscious that we need, for the sake of our expansive existence, to be industrially efficient. We are not even conscious that industry is the great field for adventure and growth, because we use that field not for the creative but for the exploitive purpose.

It is the present duty of American educators to realize these two points: that industry is the great field for adventure and growth; that as it is used now the opportunities for growth are inhibited in the only field where productive experience can be a common one. Shortly it will be the mission, of educators to show that by opening up the field for creative purpose, fervor for industrial enterprise and good workmanship may be realized; that only as the content of industry in its administration as well as in the technique of its processes is opened up for experiment and first-hand experience, will a universal impulse for work be awakened. It is for educators, together with engineers and architects, to demonstrate to the world that while the idea of service to a political state may have the power to accomplish large results, all productive force is artificially sustained which is not dependent on men's desire to do creative work. A state as we have seen, may invoke the idea of service. It might represent the productive interests of a community if those interests sprang from the expansive experience of a people in their creative adventures.

In the reconstructive period educators may have their opportunity to extend the concept that the creative process is the educative process, or as Professor Dewey states it, the educative process is the process of growth. The reconstruction period will be a time of formative thought; institutions will be attacked and on the defensive; and out of the great need of the nations there may come change. Educators will find their opportunity as they discover conditions under which the great enterprise of industry may be educational and as they repudiate or oppose institutions which exclude educational factors.

It is for educators to realize first of all that there can be no social progress while there is antagonism between growth in wealth (which is industry) and growth in individuals (which is education); that the fundamental antagonisms which are apparent in the current arrangement are not between industry and education but between education and business. They must know that as business regulates and controls industry for ulterior purposes, that is for other purposes than production of goods, it thwarts the development of individual lives and the evolution of society; that it values a worker not for his potential productivity but for his immediate contribution to the annual stock dividend; or if, as in Germany where his productive potentiality is valued in terms of longer time, it is for the imperial intention of the state and not for the growth of the individual or the progress of civilisation.
CREATIVE IMPULSE IN INDUSTRY

CHAPTER I

PRODUCTION AND CREATIVE EFFORT

As a human experience, the act of creating, the process of fabricating wealth, has been at different times as worthy of celebration as the possession of it. Before business enterprise and machine production discredited handwork, art for art's sake, work for the love of work, were conceivable human emotions. But to-day, a Cezanne who paints pictures and leaves them in the field to perish is considered by the general run of people, in communities inured to modern industrial enterprise, as being not quite right in his head. Their estimate is of course more or less true. But such valuations are made without the help of creative inspiration, although the functioning of a product has its creative significance. The creative significance of a product in use, as well as an appreciation of the act of creating, would be evident if modern production of wealth, under the influence of business enterprise and machine technology, had not fairly well extinguished the appreciation and the joy of creative experience in countries where people have fallen under its influence so completely as in our own.

It is usual in economic considerations to credit the period of craftsmanship as a time in the evolution of wealth production that was rich in creative effort and opportunity for the individual worker. The craftsmanship period is valued in retrospect for its educative influence. There was opportunity then as there is not now for the worker to gain the valuable experience of initiating an idea and carrying the production of an article to its completion for use and sale in the market; there was the opportunity then also as there is now for the worker to gain a high degree of technique and a valuation of his workmanship. It is characteristic of workmanship that its primary consideration is serviceability or utility. The creative impulse and the creative effort may or may not express workmanship or take it into account. Workmanship in its consideration of serviceability oftentimes arrives at beauty and classic production, when creative impulse without the spirit of workmanship fails. The craftsmanship period deserves rank, but the high rank which is given it is due in part to its historical relation to the factory era which followed and crushed it. While craftsmanship represented expansive development in workmanship, it is not generally recognized that the Guild organization of the crafts developed modern business enterprise.[A] Business is concerned wholly with utility, and not like workmanship, with standards of production, except as those standards contain an increment of value in profits to the owners of wealth. It was during the Guild period that business came to value workmanship because it contained that increment. In spite of business interest, however, the standard of workmanship was set by skilled craftsmen, and their standards represented in a marked degree the market value of the goods produced by them.

[Footnote A: Thorstein Veblen; Instinct of Workmanship, pp. 211-212.]

While the exploitation of the skill of the workman in the interest of the owners of raw materials and manufactured goods, had its depressing and corrupting influence on creative effort, the creative impulse found a stimulus in the respect a community still paid the skill and ability of the worker. It was not until machine standards superseded craft standards and discredited them that the processes of production, the acts of fabrication, lost their standards of workmanship and their educational value for the worker. The discredits were psychological and economic; they revolutionized the intellectual and moral concepts of men in relation to their work and the
production of wealth.

As machine production superseded craftsmanship the basis of fixing the price of an article shifted from values fixed by the standards of workers to standards of machines, Professor Veblen says to standards of salesmen. It is along these lines that mechanical science applied to the production of wealth, has eliminated the personality of the workers. A worker is no longer reflected in goods on sale; his personality has passed into the machine which has met the requirements of mass production.

The logical development of factory organisation has been the complete cooordination of all factors which are auxiliary to mechanical power and devices. The most important auxiliary factor is human labor. A worker is a perfected factory attachment as he surrenders himself to the time and the rhythm of the machine and its functioning; as he supplements without loss whatever human faculties the machine lacks, whatever imperfection hampers the machine in the satisfaction of its needs. If it lacks eyes, he sees for it; he walks for it, if it is without legs; and he pulls, drags, lifts, if it needs arms. All of these things are done by the factory worker at the pace set by the machine and under its direction and command. A worker's indulgence in his personal desires or impulses hinders the machine and lowers his attachment value.

This division of the workers into eyes, arms, fingers, legs, the plucking out of some one of his faculties and discarding the rest of the man as valueless, has seemed to be an organic requirement of machine evolution. So commendable the scheme has been to business enterprise that this division of labor has been carried from the machine shop and the factory to the scientific laboratories where experiment and discovery in new processes of technology are developed, and where, it is popularly supposed, a high order of intelligence is required. The organization of technological laboratories, like the organization of construction shops to which they are auxiliary, is based on the breaking up of a problem which is before the laboratory for its solution. The chemists, physicists, machinists and draftsmen are isolated as they work out their assigned tasks without specific knowledge of what the general problem is and how it is being attacked. Small technological laboratories are still in existence where the general problem in hand is presented as a whole to the whole engineering staff, and is left to them as a group for independent and associated experimentation. But even in such cases the technological content does not necessarily supply the impulse to solve the problem or secure a free and voluntary participation in its solution. Those who are interested in its solution are inspired by its economic value for them. In all technological laboratories, either where the problem is broken up and its parts distributed among the employees of the laboratory, or where it is given to them as a whole for solution, it is given not as a sequence in the creative purpose of the individuals who are at work on it, nor is its final solution necessarily determined by its use and wont in a community. Problems brought to the laboratory are tainted with the motive of industry which is not creative, but exploitive.

The tenure of each man employed in production is finally determined not by any creative interest of his own or of his employer but by whether in the last analysis, he conforms better than another man to the exigencies of profits. If profits and creative purpose happen to be one and the same thing, his place in an industrial establishment has some bearing on his intrinsic worth. Under such circumstances his interest in the creative purpose of the establishment would have a foundation, and he himself could value better than he otherwise would his own part in the enterprise.
The economic organization of modern society though built on the common people's productive energy has discounted their creative potentiality. We hold to the theory that men are equal in their opportunity to capture and own wealth; that their ability in that respect is proof of their ability to create it; a proof of their inherent capacity. It is a proof, as a matter of fact, of their ability to compete in the general scheme of capture; their ability to exploit wealth successfully. While the prevailing economic theory of production takes for granted men's creative potentiality there is no provision in our industrial institution for the common run of men to function creatively. There is no attempt in the general scheme for trueing-up or estimating the creative ability of workers. In the market, where the value of goods is determined, a machine tender has a better chance than a craftsman. The popular belief is that the ability of workers has native limitations, that these limitations are absolute and that they are fixed at or before birth. This belief is a tenet among those who hold positions of industrial mastery. Managers of industry for instance who control a situation and create an environment, demand that those who serve them meet the requirements which they have fixed. They do not recognize that industrial ability depends largely on the opportunity which an individual has had to make adjustments to his surroundings and on his opportunity to master them through experiment. A factory employee is required to do a piece of work; and he does it, not because he is interested in the process or the object, but because his employer wants it done.

In Anglo-Saxon and Teutonic countries, where people have fallen most completely under the influence of machine production and business enterprise, and where they have lost by the way their conception of their creative potentiality, work is universally conceived as something which people endure for the sake of being "paid off." Being paid off, it seems abundantly clear, is the only reason a sane man can have for working. After he is paid off the assumption is his pleasure will begin. A popular idea of play is the absence of work, the consumption of wealth, being entertained. Being entertained indeed is as near as most adult men in these countries come to play. Their Sundays and holidays are depressing occasions, shadowed by a forlorn expectancy of something which never comes off.

The capacity of the French people for enjoying their holidays is much the same as their capacity for enjoying their work. This, no doubt, is a matter of native habituation. But however they came by it, it has had its part in determining the industrial conditions of France. The love of the people for making things has resisted in a remarkable way the domination of machine industry and modern factory organization. The French work shop, averaging six persons, is as characteristic of France as the huge factory organization with the most modern mechanical equipment is characteristic of American industry. As the workers in these shops participate more intimately in the fabrication of goods they come more nearly to a real participation in productive enterprise. This close contact with the actual processes of production gives the workers a sense of power. A sense of their relation to the processes and their ability to control them engenders courage. Indeed it is the absence of fear, rather than the absence of work, that determines the capacity of men for play.

It was not accidental that the movement of the French workers for emancipation emphasized a desire for control of industry. The syndicalism of France has expressed the workers' interest in production as the labor movements of other countries have laid stress exclusively on its economic value to them. The syndicalists' theory takes for granted the readiness of workers to assume responsibility for production, while the trade unionists of England, Germany and the United States ask for a voice in determining not their productive but their financial relation to it.
It is the habit of these other peoples to credit the lack of interest in work to physical hardships which the wage system has imposed. But the wage system from the point of view of material welfare has borne no less heavily on the French than on other workers. It is also difficult to prove that the physical hardships of modern methods of production are greater than the hardships of earlier methods. The truth is that neither hardships nor exploitation of labor are new factors; they have both, through long centuries, repressed in varying degree the inspirational and intellectual interest of workers in productive effort. It is not the economic burdens which followed the introduction of machinery and the division of labor that distinguish these new factors in industry, but the discredit which they throw around man's labor power. They have carried the discredit of labor in its social position further than it had been carried, but this is merely a by-product of the discredit they cast on the skill and intellectual power which is latent in the working class. In this connection the significant truth for civilization is that while exploitation of labor and physical hardships induce the antagonism between labor and capital, modern factory organization destroys creative desire and individual initiative as it excludes the workers from participation in creative experience.

The new discoveries in inorganic power and their application to industrial enterprise are possibly more far reaching in their effect on the adjustment and relationships of men than they have been at any other time in the last century and a half. Whatever the world owes to these discoveries and their applications it cannot afford to lose sight of a fact of great social significance, which is, that people have accepted mechanical achievements, not as labor saving devices but as substitutes for human initiative and effort. They have not, indeed, saved labor to the advantage of labor itself, and they have inhibited interest in production. Outside of business enterprise and diplomacy—the political extension of business—mechanical devices have lost the surprise reaction and resentment which they originally set up. As a competitor with human labor they have established themselves as its fit survivor. The prophecy of Theophrastus Such seems to have been already fulfilled, and any new machine added to those already in power in the Parliament of Machines can scarcely add to the worker's sense of his own impotency. The business valuations which were evolved out of craftsmanship and which were further developed under the influence of the technology of the last century and a half, emphasized the value of material force, and repressed spiritual evaluations, such as the creative impulse in human beings.

Modern industrial institutions are developed by an exclusive cultivation of people's needs and the desire to possess. They are developed independently, as we have seen, of any need or desire to create. The desire to possess is responsible for the production of a mass of goods unprecedented and inconceivable a century and a half ago. The actual production of all of these goods is unrelated to the motive of men's participation in their production; the actual production in relation to the motive is an incident. The sole reason for the participation in the productive effort is not the desire for creative experience or the satisfaction of the creative impulse; it is not an interest in supplying the needs of a community or in the enrichment of life; it is to acquire out of the store of goods all that can be acquired for personal possession or consumption. There is no more fundamental need than the need to consume; but for the common run of men as a motive in the creation of wealth, it is shorn of adventure, of imagination and of joy.

The ownership of many things, which mass production has made possible, the intensive cultivation of the desire to own, has added another element to the corruption of workmanship and the depreciation of its value. Access to a mass of goods made cheap by machinery has had its contributing influence in the people's depreciation of their own creative efforts. As people
become inured to machine standards, they lose their sense of art values along with their joy in creative effort, their self regard as working men and their personal equation in industrial life.

Where the motive of individuals who engage in industry is the desire to possess, the rational method of gaining possession is not by the arduous way of work but of capture. The scheme of capture is a scheme whereby you may get something for (doing) nothing; nothing as nearly as possible in the way of fabrication of goods; something for the manipulation of men; something for the development of technology and mechanical science; and high regard for the manipulation of money. "Doing nothing" does not mean that manual workers, managers of productive enterprises, speculators in the natural resources of wealth production and manufactured goods, as well as financiers, are not busy people, or that their activity does not result in accomplishment. They are indeed the busy people and their accomplishment is the world's wealth. Nevertheless the intention of all and the spirit of the scheme is to do as near nothing as possible in exchange for the highest return. The whole industrial arrangement is carried on without the force of productive intention; it is carried forward against a disinclination to produce.

I have said that industry was shorn of adventure for the common man. Adventure in industrial enterprise is the business man's great monopoly. His impetus is not due to his desire to create wealth but to exploit it, and he secures its creation by "paying men off." Commonly he is peevishly expectant that those he pays off will have a creative intention toward the work he pays them to do, although in the scheme of industry which he supports the opportunity provided for such intention is negligible. An efficiency engineer estimated that there is a loss in wealth of some fifty per cent, due to the inability of the business man to appraise the creative possibilities in industry.

When exploitation of wealth is referred to, those who own it are generally meant. But exploitation of wealth is the intention of the worker as well as of the business man. To get, as I have said, something for (doing) nothing is the dominating motif in the industrial world. It is supposed to reflect the self-interest of individuals, to reflect, that is, their economic needs.

This motive of circumscribed self-interest during an era of political and industrial expansion has been adopted by philosophers as the guide as well as a clue to conduct; it was hailed by them as a sufficient and complete motivation for wealth creation; they used it as a basis of a theory for race progress resting solely on the efforts of men to satisfy their material needs through their ability to capture goods. This motive together with the possibilities which machine production opened up for wealth exploitation, gave birth to the dismal science of Political Economy; it suggested the materialistic interpretation of history, and brought to earth utopian schemes of brotherhood. Political science is dismal because it is an interpretation of dismal institutions. It may be ungenerous to speak slightingly of institutions which have yielded such great wealth, which have transformed inert matter into productive power and brought in consequence the whole world into acquaintanceship and rivalry. It would be ungenerous if it were not for a fact which has become poignant, that the exploitation of wealth and undigested relationships are today the outstanding menace to civilization.

The present world conflict has made it clear that relationships cannot remain undigested; that they are not in their nature passive. They are either integrating in their force or disintegrating. Socialism has undertaken for two generations to prove that exploitation, carries with it its own seeds of destruction. The position of the socialists is passing out of theory and propaganda.
through the hands of diplomatists, into statutes. Both the socialists and their successors would eradicate exploitation by repressing it. The socialists would repress it by shifting ownership of wealth from individuals to the state, while the diplomatists, through the same agency, would regulate those who own it.

It is an historical fact as well as a psychological one that you do not get rid of traits or institutions except as you replace them with something of positive service, or greater competitive value. The institution of capitalism exists not because of its predatory character, but because in spite of its exploitation it promotes industry, and labor and other industrial technicians do not. As our industrial institutions have grown out of a predatory concept instead of a creative one, as capture has been rewarded rather than work, as the possessive desire has been stimulated and the creative desire has been sacrificed, as employers of men and owners of machines have engaged in production because of their interest not in the process or in the use of the product, but in the reward, as wage workers have hired out for the day's work or continued during their adult life in their trade without interest in its development, because like their employers they wanted the highest cash return, wealth exploitation has come to be synonymous in the minds of men with wealth creation. A creative concept which could survive and inhibit the predatory concept must rest on such elements of creative force as are now absent from our industrial institution.

It is almost axiomatic to say that a system of wealth production which cultivated creative effort would yield more in general terms of life as well as in terms of goods, than a system like our own which exploits creative power. It is obvious that the disintegrating tendency in our system is due to the fact that production is dependent for its motive force on the desire to possess. It is also obvious that a rational system of industry which sought to give that desire among all men full opportunity for satisfaction would also undertake to cultivate the creative impulse for the sake of increasing creative effort. The result would be an increase in production. As logical as this observation may be, it is not so obvious how such a social transformation as this implies, may be effected.

Every advance in wealth creation which has become an institutional part of an economic system has been impelled and sustained by the material interests of people who at the time held the strategic position in the community. The world has progressed, or retrogressed, as the most powerful interests at any time adjusted the institutions and customs governing wealth production to their own advantage. As the controlling interests in our present scheme are the business interests, it is the business man, not the workman, who directs industry and determines its policy as well as the general policy of the nation in which it operates. It is to the advantage of private business run for private gain, to control creative effort for the purpose of appropriating the product, and to inhibit free creative expression as an uncontrollable factor in the enterprise of exploitation.

The appalling and wanton sacrifice of life which are incident to the evolution of machinery and the division of labor seem to demand at times their elimination. In weariness we are urged to retrace our steps and go back to craftsmanship and the Guilds. But it is idle to talk about going back or eliminating institutionalized features of society. We cannot go back, we have not the ability to discard this or that part of our environment except as we make it over. The result of this making over might be vitalized by methods which had belonged to earlier periods, but neither the methods nor the periods, we can safely say, will live again. Neither our own nor future generations will escape the influence of modern technology. It will play its part. It may be a part
which will lead away from some of the destructive influences which developed in the era of craftsmanship and which dominate the present. But a society too enfeebled to use its own experience will not have the power to use the experience of another people or of another time. It is beside the point to look to some other experience or scheme of life and choose that because it seems good, unless the choice is based on a people's present fitness to adapt that other experience or other scheme of life to their own experience. The proposition to revert to an earlier period suggests nothing more than the repetition of an experience out of which the present state of affairs has evolved.

Nor is there ground for the hope that in time institutions and relationships will be regulated on principles of altruism. It is not apparent indeed that such regulations would yield even the present allowance of happiness incident to our own immature method of capturing what wealth we can without relation to social factors. As unfortunate as we are in pursuit of that blind method, it is safe to predict that the world would be a madder place than it is to-day if every one devoted himself to doing what he believed was for the good of everybody else.

The hope of social revolutionists that private business would overreach itself and defeat its own purpose, grew out of the expectation that its tribute exactions would draw the subjects of capital together in a common defensive movement; that the movement on account of its numbers would overturn business and that in place of private management democratic control would be instituted. Some such outcome, sooner or later, seems inevitable if civilization is scheduled to advance. The labor union movement, unlike the political socialist revolutionary movement, undertakes in its operation to supply labor with a certain working content, which the administrative scheme of industry has excluded from the experience of its workers. But this content is not sufficient to stimulate the imagination of the trade unionists with the thought that the world of industry is the field of creative adventure. Their conception born of experience is not so flattering. It would be a brave man who would undertake to convince the twentieth century adult wage earner, involved in modern methods of machine production, that his poverty is less in his possession of wealth than in his growth and in his creative opportunity.

The industrial changes which the labor movement proposes to make are on the side of a better distribution of goods. A better distribution would have a dynamic significance in wealth production, if the actual increase which labor secured in wages and leisure were a real increase. But exploiting capital provides for such exigencies as high wages by increasing the price of products, thus reducing the wage earners' purchasing power to the former level. High wages fail to disturb the relative portion of capital and labor even more than they fail to affect the purchasing power of the worker.

It is often suggested that if the state assumed control of industry the blight of business could be removed. But in the transfer we would not necessarily gain opportunity to enjoy the adventure which industry holds out. Industry as a creative experience, it is safe to predict, would be as rare a personal experience and as foreign an influence in social existence under state management as it is under business management. The state would curb the amount of wealth exploitation possibly, but would not alter the universal attitude toward wealth production, which is to take as much and give as little as one can get off with.

Although political socialism may be the economic sequel of private capital there is no foundation for the belief that it will of itself induce creative effort or stimulate creative impulse. The faith back of the socialist movement that desirable attributes like the creative impulse, which men
potentially possess, will begin to operate automatically and universally as soon as there is sufficient leisure and food for general consumption, is blind and historically unwarranted. The signs are that a socialist state would lean exclusively on the consumption desire for production results, just as the present system of business now does. Neither fat incomes nor large leisure have furnished the world with its people of genius. In spite of the inhibiting influence of exploitation, they have come, what there are of them, out of intensive application to some matter of moment. Possibly they would come, and more of them, from the work-a-day world under socialism with the inhibiting influence of organized exploitation removed, but more of them would not insure a democracy in industry or elsewhere. Nothing insures that short of a strong emotional impulse, a real intellectual interest in the adventure of productive enterprise.

The creative desire is an incident or a sort of by-product of the economics of socialism as it is of classical economics; neither one nor the other depends on its cultivation. Either is capable of achieving mass production, but neither insures a democratic control of industry, neither provides for growth, for education in the productive process. A democracy of industry requires a people’s sustained interest in the productive enterprise; their interest in the development of technology, the development of markets, and the release of man’s productive energy.

It happens that in machine production and in the division of labor there are emotional and intellectual possibilities which were non-existent in the earlier and simpler methods of production. As power latent in inorganic matter has been freed and applied to common needs, an environment has been evolved, filled with situations incomparably more dramatic than the provincial affairs of detached people and communities. Although this technological subject matter, rich in opportunities for associated adventure and infinite discovery, is not a part of common experience, it exists, and if called out from its isolation for purposes of common experimentation, it is fit matter for making science a vital experience in the productive life of the worker.

Industry under the direction of business will not open up the adventure with its stimulating factors to its subservient labor force, unless it happens that the present methods fail, in time, to carry forward industrial enterprise on a profit-making basis; or unless labor develops the power which springs from desire for creative experience, to undertake the direction and control of industry.

The present is better than any time earlier in the history of technology for the development of a concept of industry as a socially creative enterprise. As craftsmanship extended and intensified an interest in personal ownership, it magnified the value of possessions; as it deepened the desire for protection of private property and the strengthening of property laws against human laws, it was not a _socializing_ force. While the craftsmanship period strengthened personal claims on workmanship and interest in it, mechanical power and division of labor have impersonated industry.[A] In the labyrinth of mechanical processes and economic calculation it is not to-day possible for a worker to think or speak of a product as his. He has no basis for ownership claims in any article; even the price is arranged between buyer and seller and he is not the seller. An article owes its existence to an infinite number of persons and its place in the market to as many more.

[Footnote A: Thorstein Veblen--Instinct of Workmanship, Chapter V.]

A worker’s claim to the product of his labor is merged in an infinity of claims which makes the
product more nearly the property of society than of any one individual. And this merging of claims which has resulted in the submerging of all wage workers, has set up the new educational task of discovering the possibilities for creative experience in associated enterprise.

While an article manufactured under business conditions is the product of enforced association, we have in this condition the mechanics of a real association. As it now stands, the association is one of individuals, with the impulse for association and for creative effort left out. The interests of some ninety workers associated together in the making of a shoe are not common but antagonistic, except as they are common in their antagonism to the owner of the shoe on which they work. They hang together because they must; their parting is the best part of a working day.

And yet the practice of dividing up the fabrication of an article among the members of a group instead of confining the making of it to one or two people, opens up the possibility of extensive social intercourse, and has the power, we may discover, to sublimate the inordinate desire for the intensive satisfaction of personal life. Although the division of labor has given us a society which is abortive in its functioning like a machine with half assembled parts, it offers us the mechanics for interdependence and the opportunity to work out a coordinated industrial life.

CHAPTER II

ADAPTING PEOPLE TO INDUSTRY--THE AMERICAN WAY

As machine power rivalled hand work, promoters of industry until recently relied for its advancement on the perfection of technology, giving little thought to the perfection of labor. It was confidently assumed that labor, out of its own necessities, would adapt itself automatically to the new requirements of the machine, and to the shifts of business interest. When it was discovered that there were limitations to labor's voluntary adaptation under the conditions laid down, intelligent business in America decided that the responsibility for realizing labor's adaptation or "labor's cooperation" as they call it, must be assumed by the management of industry and that that management must be scientifically worked out and applied.

Scientific management is scientific as it subjects the labor operations on each job, each specific job to be performed in a factory, to a testing out of the energy consumed; to discovering how to secure labor's maximum productivity without waste of time or energy. It is scientific as the manager's state of mind towards the physical and psychological reactions of the workers is one of inquiry and a readiness to accept, as facts of mechanical science are accepted, the reaction of the workers. A scientific manager, or engineer as he is often called, bears the same relation to the labor force in a factory that an electrical engineer bears to the electrical equipment. If his attention to the emotional reaction of the workers is less detached than scientific standards require, it must be remembered that he is trying to make adjustments which must first of all meet definite business conditions. Where the reactions of the workers interfere with the whole scheme of business administration, (and interfere they ceaselessly do), he has to substitute measures which are not strictly speaking scientific. On these occasions he adopts humanitarian schemes, which are generally spoken of as welfare work. It is the introduction of these schemes which look like a "slop over" from science to charity, that makes it difficult for outsiders to tell just what scientific management is and what it is not.

Mr. Frederick W. Taylor, the founder of scientific management, was capable of scientific
detachment in studying working men in relation to the specific job. He was able more notably than others had been before him, and more than many who have followed him, to extend the impersonal state of mind, which he enjoyed in the study of inorganic energy, to his study of human energy. Mr. Taylor's interest did not emanate from sympathy with labor in its hardships; his interest was centered in an effort to conserve and apply labor energy with maximum economy for wealth production. Mr. Taylor awakened the consciousness of industrial managers to the fact that the energy of workers like the power of machinery is subject to laws. He demonstrated that it was possible in specific operations to discover how the highest degree of energy could be attained and the largest output result, without loss through fatigue. He showed how efficiency could be enhanced by transferring the responsibility of standards of work from the workers to the managers. He formulated, as a business and industry doctrine, that a definite relation between the expenditure of labor energy and the labor reward could be established; that the wage incentive, if applied to labor in relation to energy expended, would yield, or might be expected to yield increased returns. These incentives, rewards, stimuli, which employers could apply would produce, he stated with unscientific fervor, the workers' initiative. The inability of Mr. Taylor and other scientific managers to distinguish between initiative and short lived reaction to stimulus is simple evidence that their scientific experiments were confined to comparisons which they could make between a yield in wealth where the stimulus to labor is weak, and a yield where it is strong. They will not discover what a worker's productivity is, or might be, when incited by his impulse to work, nor will they secure labor's initiative, until they release the factors, latent in industry, which have inspirational, creative force.

The attitude of Mr. Taylor and his followers, however, differs from that of the ordinary manager who maintains an irritated disregard of the disturbing elements instead of accepting them and, as far as is consistent with business principles, allaying or cajoling them. The significant contributions which scientific management has made are in line with the experiments originally introduced by Mr. Taylor. They call for the study of each new task by the management, for discovering the economy in the expenditure of labor energy before it is submitted to the working force; the standardizing of the task in conformity with the findings; the teaching of the approved methods to the working force; the introduction of incentives which will insure the full response of labor in the accomplishment of the task. Beside the standardizing of tasks and the relating the wage to the fixed standard, scientific management has made intensive experiments in the scheduling of the various operations to be performed, which are divided among the working force, so that no one operation is held up awaiting the completion of another. It has shown in this connection that work can be "routed" so that the time of workers is not lost. The most successfully managed factories also plan their annual product so that employment will be continuous. They have discovered that the periods of unemployment seriously affect the personnel of a labor force and they estimate that the turnover of the labor force which requires the constant breaking in of new men is an item of serious financial loss. The Ford Automobile Works at one time hired 50,000 men in one year while not employing at any one time more than 14,000. They estimated that the cost of breaking in a new man averaged $70.00. To reduce this cost, they instituted profit sharing, as an incentive for men to remain. Other factories have estimated the cost of replacing men from $50.00 to $200.00. A rubber concern in Ohio has a labor turnover of 150 per cent. In connection with the effort to reduce the turnover in the labor force the management of well organized factories takes great care to estimate a worker's value before employing him. The policy of transferring a man from one department to another where he is better suited yields evidently valuable results. In factories where there is effort to hold labor, to make employment continuous, the turnover has been reduced in some cases to as low as 18 per cent. Generally, however, it is still high; frequently as high as 50 per cent, and 50 per
percent is still considered low, even in factories which have given the subject much consideration.

There is a tendency in developing the mechanics of efficiency, as they relate to labor, to establish for machine production standards of workmanship. Long and weary experience has proved that wage earners under factory methods and machine conditions are not interested in maintaining standards of work. The standards which are set by the scientific management schemes of efficiency are not, to be sure, the qualitative standards of craftsmanship but they are qualitative as well as quantitative standards of machine work. The tendency to establish standards should have educational significance for workers. It would have, if the responsibility for setting standards as well as maintaining them rested in any measure with the workers; it would have, that is, if the workers had the interest in workmanship, which as things now stand they have not. The point in scientific management is that efficiency depends, wholly depends they believe, on centralizing the responsibility for setting and maintaining workmanship standards, on transferring the responsibility for standards of work from workers who do it, to the management who directs it done. I have learned of only one manager who realizes that although the factory workers are not to be trusted to maintain standards, a management nevertheless will fail to get the workers’ full cooperation until it arouses their interest in maintaining them.

The manager is Mr. Robert Wolf, who illustrated this point at a meeting of the Taylor Society in March, 1917. In describing the process of extracting the last possible amount of water from paper pulp, he said:

"Our problem was to determine the best length of time to keep the low pressure on, as the high, pressure is governed entirely by the production coming from the wet machine. After having determined that three minutes of low pressure ... gives maximum moisture test, we furnished each man on the wet machines with a clock and asked him to leave this low pressure on just three minutes. As long as the foremen kept constantly after their men and vigilantly followed them up we obtained some slight increase in the test; but it required a constant urging upon our part to focus the attention of the men upon this three minute time of low pressure.... We realized finally that in order to get the results we were after, it was necessary for us to produce _a desire_ upon the part of our men to do this work in the proper way ... so we designed an instrument which would give us a record of the time lost between pressing operations, also the number of minutes the low pressure was kept on. It took us something over a year to perfect this machine, but after it was finally perfected and a record of the operations made, we found that the men actually were operating at an average efficiency of 42 per cent, and our moisture test was running about 54 per cent. Our next step was to post a daily record of the relative standing of the men in the machine room, putting the men who had the best record at the top of the list, in the order of their weekly average efficiencies. (The efficiency of low pressure, which proved to be the most important factor, was computed by calling three minutes of low pressure 100 per cent and two minutes either way 0 per cent.) As a result of simply posting this record our efficiencies rose to over 60 per cent and our moisture test increased a little less than 1 per cent. Some of the best and most skilled men had an efficiency of over 80 per cent, but quite a large percentage of them were down below 50 per cent. We therefore decided that it was necessary to have the foreman give more detailed information to the men as to what the machine meant and how their efficiencies were obtained and to put the instrument which did the recording into a glass case in the machine room where all the men could see it. Each foreman took a portion of the chart and one of the celluloid scales by which, we obtained the efficiencies and explained in detail to each one of the men how their records were calculated. As a result of
this, our efficiency rose from 60 per cent to 80 per cent in less than four weeks, and it has remained at 80 per cent ever since--(ever since being over two years)--enabling us to get a moisture of over 56 per cent."[A]

[Footnote A: Bulletin of the Taylor Society--March, 1917.]

This was accomplished, Mr. Wolf told them, without resorting to piece work or bonus or any of the special methods of payments, their men being hired by the day throughout the entire plant. Mr. Wolf accomplished the result by giving meaning to a meaningless task, by letting the men see for themselves how they arrived at results, letting them see the different processes of getting results and knowing on their own account which were the most valuable.

There may be other managers who appreciate the value of letting men in on the experimental effort of getting results but it is not the practice to do so and it is opposed to the idea of transferring the responsibility from the workshop to the manager's office or laboratory. Because of this practice the educational value of establishing standards of workmanship is lost so far as the workers are concerned. Mr. Wolf's criticism of orthodox scientific management and his conclusions are illuminating; they are indeed revolutionary in nature as they come from a manager of a successful industrial enterprise:

"Our efforts, ever since we began to realize the workman's point of view, have been not to take responsibility from him. It is our plan to increase his responsibility and we feel that it is our duty to teach him to exercise his reasoning power and intelligence to its fullest extent. There is _no_ advantage gained by stimulating a man's reasoning power, and through this means his creative faculty, if the management relieves the man of the responsibility for each individual operation_. The opportunity for self expression, which is synonymous with joy in work, is something that the workman is entitled to, and we employers who feel that management is to become a true science must begin to think less of the science of material things and think more of the science of human relationships. Our industries must become _humanized_, otherwise there will be no relief from the present state of unrest in the industries of the world.

"In this connection it might be well to observe that our experience in the pulp industry has been that instructions which go _too much into detail_ tend to deaden interest in the work. We realize fully the value of sufficient instructions to get uniform results, but we try to leave as much as possible to the judgment of the individual operator, making our instructions take more the form of constant _teaching of principles_ involved in the operation than of definite _fixed rules_ of procedure. It is necessary to produce a desire in the heart of the workman to do good work. No amount of coercion will enlist him thoroughly in the service.

"The new efficiency is going to reckon a great deal more with the needs of the individual man; but in order to do this, it must have some philosophical conception of the reason for man's existence. _It is beginning to be understood that when we deny to vast numbers of individuals the opportunity to do creative work, we are violating a great universal law._"
endowed with good health and moral vigor resist these attempts to put something over on them, irrespective of their good or evil results.

The workers have resisted machinery not only because as individuals they were thrown, out of jobs for a time or lost them permanently, but because the machine imposed on them a method of work, of activity over which they had no control. Scientific management has undertaken to gather up whatever bits of initiative the machine had not already taken over and to hand back to the workers at the bench directions for them to follow with a blind ability to accept instruction. It is incredible to factory managers that workers object to being taught "right" ways of doing things. Their objection is not to being taught, but to being told that some one way is right without having had the chance to know why, or whether indeed it is the right way. This resistance to being taught, it seems, is nothing more nor less than a wayward desire of a worker to do his own way because it is his way, and of course from the managers' point of view, that is stupid. It is stupid, but the stupidity is in the situation. What does this waywardness of the worker to do his own way suggest? Not that he has a way worth bothering about but that he wants to exercise the quality which all industrial managers agree he does not possess--his initiative. Now a man who has the desire to exercise initiative and does not know how to put anything through is not only a useless person in society but the most pestiferous fellow in existence. Allowing that he is does not mean that he has not the power of initiative or that he could not have learned to put this initiative to good use, if at any time in his manhood or youth he had been taught to use it, instead of being required to follow the accepted ways of doing things without having had the experience of trial and error. Schools and factory management give workers scant opportunity to discover whether they have initiative or have not.

Mr. Wolf finds that "while it is possible, under certain conditions, to compel obedience, there is no possible way in which a man can be compelled to do his work willingly and when he does it unwillingly he is far from being efficient. He must have the opportunity to enjoy his work and realize himself in its performance." "In our plant," he remarks, "we never made it a practice to determine arbitrarily standard methods for performing an operation, for we believe that the men who are actually doing the work have generally as much to contribute as the foremen and department heads in deciding standard practices; and because we give the workman the chance to have the most to say about the matter, he is willing to conform to the standard, because it really represents a concensus of opinion of the men in his particular group." It is significant in this connection to remember that he does not pay the men by special methods to get the return. "I am not necessarily opposed to piece work or task and bonus methods of payment.... We have been able to obtain splendid results without resorting to a system of immediate money rewards." He thinks it is better to pay the workers liberally so that they "can forget this economic pressure and do good work because of the joy that comes from the consciousness of work well done."

Scientific management like ordinary management as a matter of fact does not want to cultivate initiative in the rank and file of workers; it would like to find more of it; and its eternal expectation is that enough of it will rise out of the oppressive atmosphere of the factory system to supply its limited needs. Scientific management especially wants this, as it must have more foremen and teachers to carry forward its advanced schemes of organization. But every manager will tell you that industry does not produce men with sufficient initiative to fill these positions. Their estimates of the number of men found in industry who have initiative varies from one to five per cent. The rest they believe are born, routine workers. They speak of their limitations as native. Managers do not stop to consider that their judgments are based wholly on the reaction of the mass of
wage workers to the special stimuli which they offer. They say also that high school and college boys show up very little if any better in respect to initiative than the lower school product. The truth is that schools and colleges are more concerned with passing on the standards of an older generation to a younger, and the younger that generation is the less it is entrusted with opportunity to make its own first hand inquiries. That is, the lower schools which deal with a generation at its most plastic time, furnish the higher schools with minds inured to the pressure of accepting subject matter without independent inquiry or curiosity.

Factory management like college and school management, instead of depending on the subject matter to interest the workers, instead of opening up to them the factors of interest in industrial enterprise, has adopted incentives for getting the required work done. Enlightened school practice, out of long failure to get the children's initiative by the artificial stimulus of rewards for work done, now depends upon the content of the subject matter and the children's experiments with it, to develop their desire to do the work. The practice of depending on school rewards instead of interest in subject matter is largely responsible for superficial knowledge and lack of ability to think as well as to act. As schools fail to incite the interest of the children they train them to put through this and that task and reward them for it without having added to their power of undertaking tasks on their own account. Indeed, as they fail to give them the chance to do that, they actually decrease whatever power they may have had.

The doing of tasks in factories for the sake of rewards, gives the workers experience in winning rewards. As they are interested only in the reward, they carry away no desire or interest in the work experience. As the method of doing the work is prescribed in every detail and their only requirement, under scientific management, is to follow directions with accuracy, they are trained to do their tasks as the children in school are trained. They are trained in routine, and to do each task as it is given. This is not education, it is training to do tricks. The worker does not take over what can be called experience from one task to another. He forms certain motor habits, called skill. But under the efficient methods of scientific management the acquirement of this skill is robbed even of the educational value that it had under the unscientific method of factory work, which within its limited field, left the worker to discover by trial and error what were the best methods of getting results. Moreover, the standards of workmanship which scientific management sets up are not the worker's own standards; he has had no part in the making of them or in deciding on the comparative merits of the results. He accomplishes the results as he follows directions, not for the sake of the result, not for the sake of good workmanship, but for the reward.

As I have said scientific management has given the subject of incentives the same careful thought that it has given to the study of lost energy. The two important incentives for inducing the response of labor to productive enterprises which scientific management has carried forward in their applications, are wages and promotion. The general assumption is that the wage as an incentive has no limitations, except the physical limitation of a human being in response to stimulus. And surely it is true that the chance to "make money" is to-day the most powerful stimulus in use. But thoughtful managers of industrial enterprise tell you, incredible as it may seem, that the worker's objection to applying himself to his task is not invariably overcome by anticipation of the wage return; he will slack or be perverse or throw over a job in the face of opportunities to earn as good a wage or a better one than he can get elsewhere. It is well known that workers joint unions in the face of opposition of employers and at the risk of losing permanent positions.
A resourceful manager in one of the most intelligently managed plants in the United States told me that women were less susceptible than men to the wage incentive. He found that many of them are content when their wage covers a sum which represents for them their personal requirements; that they cannot interest them in trying for more. On that account the manager takes up the case of the individual girl to see if her ambition to earn more money cannot be stimulated. They find sometimes that a mother requires her daughter to give in her whole wage at the end of the week and that the girl has no pleasure in the spending of it; they visit the mother and persuade her to let the girl keep a proportion of her wage and point out to the mother that she is limiting the girl's ambition. They also find girls who have entire control over the spending of their wages, who are without ambition to earn over and above a certain sum because that sum will meet their own recognized needs. The case of these girls the management tries to cover by encouraging them to save for vacations and other purposes which they offer by way of suggestion. In both of these instances the management undertakes to create new wants or ways of realizing wants which were not recognized by the workers themselves. The satisfaction of these wants may or may not be in the direction of extending experience and expanding contacts. But that is neither here nor there. The point is, the manager of the industry has used an incentive for increasing production which has no relation to production itself. He is forced to do this because he fails to make the process of production a matter of interest to the worker. The processes of production do not of themselves as we know compel the workers' application or stimulate their desire for productive enterprise.

It is in the nature of the case impossible to increase the wage incentive indefinitely. One large and scientifically managed plant has made remarkable provisions for staving off the time when the dead line is reached. They have taken stock account of the labor power they require, the amount of energy which each worker possesses, for the purpose of evaluation and payment. They have undertaken to cover as separate items each condition which affects a worker's relation to his job. They rate as separate items the worker's proficiency, reliability, continuity in service, indirect charges, increased cost of living, and periods of lay-off; they rate him according to the number of technical processes he is proficient in, whether or not he is engaged on more than one; they rate him if he attends the night school connected with the factory and shows in this way a disposition to learn other operations than, those he already knows. Why, they wonder, does only ten per cent of the force take advantage of the school and what, they are eager to find out, can they do further to secure the men's cooperation. For "cooperation," they say, "in a special way deserves credit, since it is unexpected ... certain well defined acts of cooperation will bring extra reward." Their rewards so carefully calculated did not seem to enlist response as spiritual in its nature as cooperation. It seemed that they had reached "the dead line" where wage stimulus fails to draw its hoped for response.

To get from the workers the highest efficiency the scientifically managed plants pay for a task a stated rate based on piece or time; if the task is performed within the time set and the directions for doing the task as laid out by the management, are followed, the worker receives in addition to the regular rate, a bonus. Mr. H.L. Grant, while working with Mr. Taylor, discovered that there was weakness in the system of paying bonuses, and the weakness was not overcome until he devised a method of paying the workman for the time allowed plus a percentage of that time according to what he did. This method he declares constantly induced further effort and overcame what they discovered was the weakness in a flat bonus. As fair or as superior as this bonus may be in relation to the prevailing rate in the market, managers say that the workers are apt in time to fall below the standard as their work becomes routine, unless the incentive after a time is increased or changed in character. In other words the wage incentive is like a virus
injection. The dose is not continuously effective, except as the amount is increased or altered.

A usual method of keeping alive the financial incentive is profit sharing and schemes for participation in profits, but they are rewards of general merit and bids for continuity of service; they have no direct relation to the workers' efficiency and compliance with standards which distinguish the wage rewards of scientifically managed plants.

Promotion, the incentive second in importance to the wage incentive, is of assistance in postponing the time when the dead line for the worker is reached. Nothing better illustrates the limitations of promotion in this respect than the fact that in factories where the turnover is the lowest, the opportunity to promote the workers decreases; it falls in proportion to the length of their term of service. That is, chances for promotion are the lowest in factories where conditions otherwise are favorable to the worker. In the factory where the turnover is only 18 per cent the management says that promotion is a negligible factor. Where the turnover is high there is greater opportunity in plants scientifically managed than in others to promote men, as the scheme of organization calls for a larger number of what they call "functionalized foremen" and teachers in proportion to the working force.

It is as I have said, on account of the necessity of these positions in the general scheme that managers of factories are interested in finding more men who have initiative, than industry under their direction has produced.

Before scientific management was discovered, business management and machinery already had robbed industry of productive incentives, of the real incentive to production; a realization on the part of the worker of its social value and his appreciation of its creative content. All that was left for scientific management to gather together for its direction were bits of experience which workers gained by their own experimental efforts at how best to handle tools. Their efforts it is true were not sufficiently great in this direction to promise progressive industrial advance. The margin for experiment which was still theirs was not sufficiently large to insure continued effort inspired by an interest in the work.

When we have taken into full account the repressive effect of scientific management on initiative, we may well admit an advantage: educationally speaking, the repression is direct. The workers are fully aware that they are doing what some one else requires of them. They are not under the delusion that they are acting on their own initiative. They are being managed and they know it and all things being equal (which they are not) they do not like it. The responsibility they may clearly see and feel rests with them to find a better scheme for carrying industry forward. The methods of scientific management are calculated to incite not only open criticism from the workers but to suggest that efficient industry is a matter of learning, and that learning is a game at which all can play, if the opportunity is provided.

Scientific managers have hoped that their plans to conserve energy and increase the wage in relation to expenditure of energy would meet little opposition. They also have hoped that the paternalistic feature of welfare work would allay opposition. But I am not inclined to include the welfare schemes in a consideration of scientific management; they have little light to throw on what educational significance there is in the efficiency methods which scientific management has introduced in industry. The playgrounds attached to factories, the indoor provisions for social activity, the clubs, while not having an acknowledged relation to the scientific management of the factory and while repudiated by some managers, are a common feature of
plants which claim to be scientifically managed. There are scientifically managed plants which object to the recreational and other features which have to do with matters outside the province of the factory, on the ground that it is a meddling with the personal side of people's lives. "A baseball game connected with the factory," said the educational manager of a certain plant, "has the effect of limiting the workers' contacts; it is much better for them, as it is for every one, not to narrow their relationships to a small group, but to play ball with the people of the town." It is significant that this concern deals with the union and conforms to its regulations. Whether this more generous concept of the workers' lives yields more in manufactured goods than one that confines the activity of the workers to the factory in which they labor, scientific management, so far as I know, has not discovered.

The very nature of the welfare schemes suggests that they are inspired more out of fear of the workers' freedom of contact than launched on account of comparative findings which relate strictly to the economy of labor power. The policy of leaving the workers free, it was clear in the instance just cited, had been adopted out of a personal preference for freedom in relationships. The introduction of clinics, rest rooms, restaurants, sanitary provisions, and all arrangements relating directly to the workers' health have a bearing on efficiency and productivity which is well recognized and probably universally endorsed by efficiency managers, even if they are not invariably adopted.

Scientific management wants two things; more men in the labor market to fill the positions of functionalized foremen, more men than modern industrial society has produced; and it wants an army of workers who will follow directions, follow them as one of the managers said, as soldiers follow them. It wants this army to be endowed as well with the impulse to produce. It may by its methods realize one of its wants, that is, an army of workers to follow directions; but as it succeeds in this, as it is successful in robbing industry of its content, and as it reduces processes to routine, it will limit its chances to find foremen who have initiative and it will fail to get from workers the impulse to produce goods.

During the last four years, under the stress of a consuming war every stimulus employed by business management for speeding up production has been advanced. Organized efficiency in the handling of materials has increased the output, as increased rewards to capital and labor have stimulated effort. But the quantitative demand of consumption requirements is insatiable. It is not humanly possible under the present industrial arrangements to satisfy the world's demand for goods, either in time of war or peace. It was never more apparent than it is now, that an increase in a wage rate is a temporary expedient and that wage rewards are not efficient media for securing sustained interest in productive enterprise. It is becoming obvious that the wage system has not the qualifications for the coordination of industrial life. As the needs of the nations under the pressure of war have brought out the inefficiencies of the economic institution, it has become sufficiently clear to those responsible for the conduct of the war and to large sections of the civil population, that wealth exploitation and wealth creation are not synonymous; that the production of wealth must rest on other motives than the desire of individuals to get as much and give as little as particular situations will stand.

In England and in the United States, where the individualistic conception of the industrial life has been an inherent part of our national philosophy, the governments, with cautious reservations, have assumed responsibilities which had been carried in normal times by business. Because business administration had been dependent for its existence on a scheme of profiteering it is not in the position where it can appeal to labor to contribute its productive power in the spirit of
patriotic abandon. But governments as they have taken over certain industrial responsibilities are in a better position to make such appeals to capital as well as to labor.

The calculable effect of the appeal to capital to assume the responsibility is in the long run of passing importance, as under the present business arrangement that is the position capital occupies. In other words, the appeal will mark no change in capitalist psychology as it promises to do in the case of labor.

The calculable effect on labor psychology may have revolutionary significance. It is quite another sort of appeal in its effect from the stereotyped and familiar one of employers to labor to _feel_ their responsibility. That appeal never reached the consciousness of working men for the reason that it is impossible to feel responsible or to be responsible where there is no chance of bearing the responsibility. Experiencing responsibility in industry means nothing more nor less than sharing in the decisions, the determination of procedure, as well as suffering from the failure of those decisions and participating in their successful eventuation. As the governments in the present case have made their appeals to labor they have carried the suggestion of partnership in responsibility because the government is presumably the people's voice and its needs also presumably are the common needs and not the special interests of individuals. It is hardly necessary to point out that it was not the intention of government officials who made the appeal to excite a literal interpretation; they did not expect to be taken so seriously and up to date they have not been taken more seriously than they intended by American labor. All they mean and what they expect to gain, is what employers have meant and wanted; that is labor's surrender of its assumed right to strike on the job, its surrender of its organized time standards and its principle of collective bargaining. But when officials speak in the name of a government what they mean is unimportant; what it means to the people to have them speak, and the people's interpretation of what they say, is the important matter.

These appeals of the governments in this time of war to the working people have the tendency to clear the environment of the suggestion that common labor, that is the wage earning class (as distinguished from salaried people, employers and the profiteers pure and simple) are incompetent to play a responsible part in the work of wealth production. A responsible part does not mean merely doing well a detached and technical job; it means facing the risks and sharing in the experimental experience of productive enterprise as it serves the promotion of creative life and the needs of an expanding civilization. As the appeals of the governments at this time bear the stamp of a nation's will, its valuation and respect for common labor, there is the chance, it seems, that they may carry to the workers the energizing thought that _all_ the members of the industrial group must assume, actually assume, responsibility for production, if production is to advance. Equally important in the interest of creative work is the power of these appeals to shift the motive for production from the acquisitive to the creative impulse. In the midst of the world's emergency, driven by the fear of destruction the nations have turned instinctively to the _unused_ creative force in human and common labor, that is to the ability of the wage earner to think and plan. If the response of labor is genuine, if with generous abandon it releases its full productive energy, it is quite certain as matters now stand that neither the governments nor the financiers are prepared to accept the consequence.

If labor in answer to these appeals gains the confidence that it is competent to carry industrial responsibility, or rather that common labor, together with the trained technicians in mechanics and industrial organization are competent _as a producing group_ to carry the responsibility, one need we may be sure will be eliminated which, has been an irritating and an unproductive
element in industrial life; I mean the need the workers have had for the cultivation of class isolation. As the workers become in the estimation of a community and in their own estimation, responsible members of a society, their more rather than less abortive effort to develop class feeling in America, will disappear. Under those conditions concerted class action will be confined to the employers of labor and the profiteers, who will be placed in the position of proving their value and their place in the business of wealth creation. On this I believe we may count, that labor will drop its defensive program for a constructive one, as it comes to appreciate its own creative potentiality.

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Judging from recent events in England, where the government appeals to labor have had longer time to take effect, it seems that new brain tracks in labor psychology have actually been created. English labor apparently is beginning to take the impassioned appeals of its government seriously and is making ready to assume the responsibility for production. The resolutions adopted by the Labor Party at its Nottingham Conference in November in 1917 covered organized labor's usual defense program relating to wage conditions. The Manifesto which was issued was first of all a political document, written and compiled for campaign purposes. But the significance of the party's action is the new interpretation which it is beginning to give industrial democracy. It is evident where state ownership is contemplated that the old idea that industry would pass under the administrative direction of government officials, is replaced by the growing intention and desire of labor to assume responsibility for administration whether industry is publicly or privately owned. The Party stands for the "widest possible participation both economic and political ... in industry as well as in government." In explanation of the Manifesto, the leader of the Party is quoted in the Manchester Guardian as saying, that when labor now speaks of industrial democracy it no longer means what it did before the war; it does not mean political administration of economic affairs; it means primarily industrial self-government.

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Perhaps an even better evidence of the intention of English labor in this direction is the movement towards decentralization in the trade union organization. This movement, known as the "shop-stewards" movement is essentially an effort of the men in the workshops to assume responsibility in industrial reconstruction after the war, a responsibility which they have heretofore under all circumstances delegated to representatives not connected directly with the work in the shops. As these representatives were isolated from actual problems of workshop production and alien therefore to the problems in their technical and specific application, they were incapable of functioning efficiently as agents of productive enterprise. This "shop stewards" movement recognizes and provides for the interdependence of industrial interests, but at the same time it concerns itself with the competent handling of specific matters.

Such organization as the movement in England seems to be evolving, the syndicalists have contended for as they opposed the German idea of state socialism. But the syndicalists in their propaganda did not _develop_ the idea of industry as an adventure in creative enterprise. Instead they emphasized, as did the political socialists and the trade unionists, the importance of protecting the workers' share in the possession of wealth. They made the world understand that business administration of industry exploited labor, but they did not bring out that both capital and labor, so far as it was possible for each to do, exploited wealth. That was not the
vision of industry which they carried from their shops to their meetings or indeed to their homes. Their failure at exploitation was too obvious.

An interesting illustration of what would happen in the ranks of the syndicalists if the business idea of labor's intellectual and emotional incapacity for functioning, gave way before a community's confidence in the capacity of labor—we have in the case of the migratory workers in the harvesting of our western crops. The harvesters who follow the crops with the seasons from the southern to the northern borders of the United States and into Canada are members of the most uncompromisingly militant organization of syndicalists, The Industrial Workers of the World. On an average it takes ten years for these harvesters to become skilled workers and these men, members of this condemned organization, are the most highly skilled harvesters in the country. On account of their revolutionary doctrines and their combined determination to reap rewards as well as crops, they are considered and treated like outlaws, and outlaws of the established order they are in spirit. When the owners of the farms of North Dakota realized that their own returns on the harvests were diverted in the marketing of their grain, they combined for protection against the grain exchanges and the elevator trusts. While developing their movement they discovered that the natural alliance for their organization to make was with the men who were involved with them in the production of grain. And as the farmers have accepted the harvesters as partners they have formed in effect a coordinated producing combination. Without finally settling the problem of agriculture, they have strengthened the production group and eliminated strife at the most vital point.

In the period of reconstruction the industrial issues of significance to democracy will be whether or not management of industry as it has been assumed by the state for the purpose of war shall revert after the war to the condition of incompetency which the war emergency disclosed or whether state management shall be extended and developed as it was in Germany after the Franco-Prussian War. Fortunately, these evidences of a new interest of labor in industry as a social institution, give us some reason to hope that we shall not be confined to a choice between business incompetency and state socialism. The evidence of the desire on the part of the labor force to participate in the development of production is the factor we should keep in mind in any plans for democratic industrial reconstruction. It is inevitable that an effort to open up and cultivate this desire of labor will be regarded by the present governing forces with apprehension. The movement of labor in this direction is now looked upon with suspicion even by people who are not in a position of control. The general run of people in fact outside of those who recognize labor as a fundamental force in industrial reconstruction, conceive of the labor people as an irresponsible mass of men and view their movements as expressions of an irresponsible desire to seize responsibility. They are the men who are not experienced in business affairs and therefore cannot, it is believed, be trusted. The arguments against trusting them are the same old arguments advanced for many centuries against inroads on the established order of over-lordship. But over-lordship has flourished at all times, and in the present scheme of industry it flourishes as it always has, in proportion to the reluctance of the people to participate as responsible factors in matters of common concern. Corruption and exploitation of governments and of industry are dependent upon the broadest possible participation of a whole people in the experience and responsibilities of their common life. It is for this reason that we need to foster and develop the opportunity as well as the desire for responsibility among the common people.

After the war, it is to be hoped that America will undertake to realize through its schemes for reconstruction its present _ideals_ of self-government. As it does this, we shall discover that the
issues which are of significance to democracy are of significance to education; for democracy and education are processes concerned with, the people's ability to solve their problems through their experience in solving them. If America is ever to realize its concept of political democracy, it can accept neither the autocratic method of business management nor the bureaucratic schemes of state socialism. It cannot realize political democracy until it realizes in a large measure the democratic administration of industry.

CHAPTER III

ADAPTING PEOPLE TO INDUSTRY--THE GERMAN WAY

Statemanship in Germany covered "industrial strategy" as well as political. Its labor protection and regulations were in line with its imperial policy of domination. Within recent years labor protection from the point of view of statesmanship has been urged in England and America. The waste of life is a matter of unconcern in the United States so long as private business can replenish its labor without seriously depleting the oversupply. It becomes a matter of concern only when there are no workers waiting for employment. The German state has regulated the conditions of labor and conserved human energy because its purpose has been not the short-lived one of private business, but the long-lived one of imperial competition. It was the policy of the Prussian state to conserve human energy for the strength and the enrichment of the Empire. Whatever was good for the Empire was good, it was assumed, for the people. The humanitarians in the United States who tried to introduce labor legislation in their own country accepted this naive philosophy of the German people, which had been so skillfully developed by Prussian statesmen, without appreciating that its result was enervating. Our prevailing political philosophy, however, that workers and capitalists understand their own interests and are more capable than the state of looking after them, stood in the way of adopting on grounds of statesmanship the German methods.

The American working man has never been convinced that he can get odds of material advantage from the state. His method is to get all he can through "pull," good luck or his superior wits. He could find no satisfaction like his German brothers in surrendering concrete interests for some abstract idea of a state. He could find no greater pleasure in being exploited by the state than he now finds in exploitation by private business. The average American values life for what he can get out of it, or for what he can put into it. He has no sentimental value of service, nor is service anywhere with us an institutionalized ideal. We judge it on its merits, detached perhaps, but still for what it actually renders in values.

In conformity with American ideals, wage earners look to their own movements and not to the state for protection. Their movements require infinite sacrifice, but they supply them with an interest and an opportunity for initiative which their job lacks. The most important antidote for the workers to factory and business methods is not shorter hours or well calculated rest periods or even change-off from one kind of routine work to another. As important as these may be, reform in labor hours does not compensate the worker for his exclusion from the directing end of the enterprise of which he is a part and from a position where he can understand the purpose of his work. The trade union interference with the business of wealth production is in part an attempt to establish a coördination of the worker which is destroyed in the prosecution of business and factory organization. The interference of the union is an attempt to bridge the gulf between the routine of service and the administration, and direction of the service which the worker gives.
I do not intend to imply that the labor movement is a conscious attempt at such cooordination. It is not. The conscious purpose is the direct and simple desire to resist specific acts of domination and to increase labor's economic returns. But any one who follows the sacrifices which organized workers make for some small and equivocal gain or who watches them in their periods of greatest activity, knows that the labor movement gets its stimulus, its high pitch of interest, not from its struggle for higher wage rates, but from the worker's participation in the administration of affairs connected with life in the shop. The real tragedy in a lost strike is not the failure to gain the wage demand; It is the return of the defeated strikers to work, as men unequipped with the administrative power--as men without will.

There could be no greater contrast of methods of two movements purporting to be the same, than the labor movement in Germany and in the United States. The German workers depended on their political representatives almost wholly to gain their economic rewards. Their organizations made their appeal to the sort of a state which Bismarck set up. They would realize democracy, happiness, they believed, when their state represented labor and enacted statutes in its behalf.

If Germany loses the war the chances are that the people may recognize what it means for the people of a nation to let the title to their lives rest with the state; they will know perhaps whether for the protection they have been given and for the regulation of their affairs and destiny they have paid more than the workers of other countries, who, less protected by law, suffered the exigencies of their assumed independence.

How much the German people depended upon the state and how much their destiny is affected by it is illustrated better by their educational system and its relation to industry than by any labor legislative protective practices or policy.

George Kerschensteiner, the director of the Munich schools, in his book on "The Idea of the Industrial School," tells us that the _Purposes