

Human Relations in Industry

From Ernst Abbe to Karl Mannheim

By HILDA WEISS

I

"EIGHT HOURS TO WORK, eight hours to sleep, eight hours to be a human being (*Mensch sein*)," was the slogan under which Ernst Abbe introduced the eight-hour-day in the Zeiss Optical Factory in Jena, Germany in 1900.¹ Abbe, the founder of the Carl Zeiss Stiftung (Foundation), was a social reformer and philanthropist. He recognized early the fact that, even under very favorable social and working conditions like those established at his factory, the working man was still mostly a worker, very little a man, a human being. Even highly qualified work of mechanical precision had to undergo more and more the specialization process of division of labor and mechanization. To be a human being was considered by Ernst Abbe as a rightful demand of the industrial worker; but, at his time, he believed its realization possible only outside working hours.

Human relations in industry have undergone three important changes in the last hundred years: (1) No separation between being a worker and being a human being in the traditional workshop where co-operation between master, journeyman and apprentice was the rule; (2) Purposive separation between being a worker and being a man under the conditions of mechanization and bureaucratization of industry; (3) Recognition of the worker as being a whole human personality whose rights and desires during working hours and outside have to be taken into consideration.

Ernst Abbe, standing on the threshold between the first and second stages of this development, made an attempt at an individual solution of human relations in his own factory. Karl Mannheim designed a scheme for the purposive transition from the second to the third stage within the framework of planning social changes in our contemporary society.

In the original optical workshop, founded in 1846, the relationship between Carl Zeiss and his fellow-workers had been the traditional one: he had worked and lived with them; no separation between being a worker and being a man. What Max Weber calls the "traditional domination" was based on the "everyday belief in the sacredness of traditions that have

¹ See Ernst Abbe, *Sozialpolitische Schriften*, Jena, 1906, p. 231; Hilda Weiss, *Abbe und Ford*, Berlin 1927, p. 18.

been valid longer than anyone can remember."² In that workshop no formal regulations existed. In the process of learning the mechanical skill, human relations were easily established in that relatively small group: superior-subordinate and co-operative relationships were naturally formed. "Technical and social skill," as Elton Mayo would say, were developed simultaneously.

Abbe had the chance to see one period of industrial relations close and another open and he had the insight to recognize the implications of the social change. He not only lived long enough to see the Zeiss workshop grow into an optical factory with many hundreds of workers and increasing division of labor, but he was also a witness to the birth of large-scale enterprise, of joint stock companies and big corporations in Germany. Abbe studied the effects of mechanization of labor which separated the workers from their tools and the development of corporations which separated ownership and control. The result of his research proved loss in the individual's pride in his work, loss of traditional human relations between master and worker and between fellow workers. In his factory he introduced a good and stable minimum salary guaranteed to every worker, which was increased by (a) a supplement according to the individual output as a production bonus and (b) a Christmas bonus signifying a sharing in the profits of the enterprise. The right to a pension was attached to the basic salary. A housing project was established, not owned by the factory but by a co-operative agency of the workers. The factory foundation, together with the University and the city of Jena, set up a variety of educational and recreational facilities that assured the workers pleasant social conditions and an extremely high standard of living. A workers' committee (*Arbeiter-Ausschuss*) served as an example of workers' rights for German labor legislation. Foreseeing the bad effects of mechanization of industry, Abbe suggested to other employers and to the State that a substantial part of industrial profit should be used to improve the economic and social conditions of the workers; greater security should be given by a pension and profit sharing plan, and by severance pay; workers' committees should establish greater social recognition and participation in management responsibility. After the German Revolution of 1918 and the new law concerning factory councils, the Zeiss workers increased the power and strengthened the influence of their factory council tremendously on the basis of industrial unionization and the closed shop. On a

² Max Weber, *Wirtschaft und Gesellschaft*, Part III, p. 124.

small and limited basis Abbe understood the necessity of continuous mutual adjustment between the institutions of our society to bring about social changes in the interest of man himself.

II

"THE CARL ZEISS *Stiftung* is not ruled by private business interests but by the interests of general social welfare."³ This concept of the rôle of large-scale enterprise was shared in Germany, among others, by Gustav Schmoller and Walter Rathenau⁴ and has been echoed by Henry Ford in this country.

The profits we are most interested in are those the public gets from using the commodities that industry produces. After all, the only real profit is general benefit.

In these ideologies of private entrepreneurs the social aspects of the increasing division of labor are stressed but the private appropriation of profit is forgotten. Historically, however, the social division of labor succeeded the individual work of independent artisans in the form of mass production of factory workers dependent on an individual entrepreneur who owns the machines and the profits on production. The social division of labor, made possible by the private ownership of capital, has brought about the growing one-sidedness and imperfection of the individual worker.

The effect of mechanization of industry and large-scale enterprises on human relations is one subject on which Karl Marx and Max Weber agreed: what Marx calls "*Verdinglichung*" (reification) and Weber "rational domination," describes the process of formal, rational, impersonal, dehumanized relations in industry. Personal "values" are excluded, relations are objectified. Business is supposed to be carried out according to "calculable rules" and "without regard for persons." Industrial relations are best where love and hatred, all pure personal, irrational and emotional elements which escape calculation, are eliminated. Max Weber compares the rule in the large corporation to the functioning of the State: "Rational bureaucracy" promotes rational efficiency here and there. He identifies "the process of rationalization with mechanism, depersonalization, and oppressive routine. Rationality, in this context, is seen as adverse to personal freedom."⁵

³ Abbe on the fiftieth anniversary of the optical workshop, 1896.

⁴ "... The de-individualization of ownership, the objectification of enterprise, the detachment of property from the possessor, leads to a point where the enterprise becomes transformed as it were into a trusteeship, or perhaps it would be better to say into an institution resembling the State." Rathenau, "In Days to Come," New York, 1921, p. 121.

⁵ Gerth and Mills, "From Max Weber: Essays in Sociology," New York, 1946, p. 50.

The technical process of industry creates a social structure in which personal factors are reduced to the minimum. To counteract these conditions of anonymity and *Verdinglichung* (reification),⁶ workers in large enterprises have created informal groups and cliques in which their desire for social recognition may be satisfied to a certain extent. Thorstein Veblen describes another reaction provoked by our machine culture: as training for mechanical production becomes more and more matter-of-fact and impersonal, mostly a "quantitative apprehension and appreciation of things,"⁷ a desire for "taking a vacation," a return to nature, to simple life, develops like an antidote in the depersonalized individual. The maximum increase of output is the aim of production, the dehumanized worker is its by-product. Be it Taylorism, Fordism or Stakhanovism, all these methods of standardization are different only in their procedure; the expected result is increased output. Production is more important than man. Production does not serve man but man serves production: "*La réalité économique prime la réalité humaine.*"⁸

As property rights have dominated human rights, economic interpretation of the workers' demands has been the rule among entrepreneurs as well as among workers: Marx's economic interpretation of history has been greatly responsible for the worker's point of view, an oversimplification and standardization of the labor problem for that of the employers. Recent industrial research, especially that of Elton Mayo, Roethlisberger and Dickson, and B. B. Gardner,⁹ has finally destroyed that myth upheld on both sides of the fence. The result of those industrial studies was that economic motivation was subordinated in the minds of the interviewed workers to considerations of their whole personal and social situation, to their own definition of their conditions, especially their social relationships with superiors and fellow workers. Wage increase seemed to be less important than "Security, pleasant working relations and status in a competitive society."¹⁰

Is Veblen right in his statement concerning the loss of pride of workmanship in our machine-dominated industrial process? Was not perhaps

⁶ A comparison between anthropomorphism in ante-machine age and reification in the machine age might be an interesting study.

⁷ Thorstein Veblen, "Instinct of Workmanship," Ch. VII, p. 318.

⁸ See Daniel-Rops, *Par delà notre nuit*, Paris, 1946, pp. 161-5.

⁹ Elton Mayo, "Human Problems of an Industrial Civilization," New York, 1933; Elton Mayo, "The Social Problems of an Industrial Civilization," Boston, 1945; Roethlisberger and Dickson, "Management and the Worker," Cambridge, 1939, B. B. Gardner, "Human Relations in Industry," Chicago, 1945.

¹⁰ Wilbert E. Moore, "Industrial Relations and the Social Order," New York, 1946, p. 342.

the guild artisan as dominated by tradition as the modern worker is dominated by rationalization and technological division of labor? Don't we embellish today the journeyman's general living and working condition by thinking only of the individual use of tools and forgetting the long hours of work and the often unpleasant surroundings? What the worker today resents is not so much having become an attendant to a machine but having lost social status and recognition of his rôle and work by being considered much less important than the machine and its output. Working conditions can certainly be improved in the direction indicated in those studies concerned with fatigue and monotony in machine shops, not only by changing the working conditions and by introducing rest periods, but by letting the worker know his rôle and his part in the enterprise as a whole.

Division of labor under "normal" conditions, according to Emile Durkheim, produces social solidarity. On our level of industrial civilization, "organic solidarity" is realized by the interplay and interdependence of heterogeneous forces: society as a whole develops more freedom of movement as each individuality contributes its share more fully. The parts acting in their individual ways grow in their specific actions as these actions contribute to the growth of the whole. Durkheim calls our present situation "anomic," because in industrial crises and in stages of conflict between capital and labor the normal division of labor is frustrated: specialization leads to greater separation in large-scale industry, separation of the worker from the employer and separation of the workers themselves whose "spirit of togetherness," whose interest in social relationships and co-operation is "snuffed out."¹¹ Under "normal" conditions each individual at each place in the social division of labor supposedly maintains "constant relations with neighboring functions," take "cognizance of their needs and of the changes which they undergo."¹² In actual industrial relations, social distance and isolation are produced instead of the social cohesion which should be the normal source and result of division of labor.

The technological changes under which man suffers as long as they dominate him by creating insecurity and unemployment can and must be dominated by man. They make possible a liberation of the individual in the economic sphere of life which has to follow the realization of political freedom. Technological inventions have no value in themselves; all depends on the use man makes of them. We have achieved great accomplishments in the field of technology but we have not been able to make the

¹¹ Emile Durkheim, *De la Division du Travail*, Paris, 1893; New York, 1933, p. 357.

¹² *Ibid.*, p. 372.

greatest use of our inventions for the best of man's individual development or group co-operation, be it between social classes or nations.

The doctrine of "technological primacy" or the "theory of the cultural lag" is objectively true as long as "the original goal of more economical production" retains "precedence over other values."¹³ But how should we be able to bring about those social changes that establish the primacy of man, the human rights of the individual in the field of economic relations as they were established in our political system? The year 1789 is remembered not only because of the political victory of human rights, *liberté, égalité, fraternité*, but also for Watt's steam engine that was then introduced into the cotton industry. Coinciding with the political revolution the technological revolution created the preliminary condition for the economic liberation of man. The road of technological progress has been long and hard: from the Luddites who destroyed the machines as their enemies, over the domination of man by the machine for more than a century, to the liberation of man by machine which is man's task in our time.

Lyman Bryson contrasts fascism and democracy by stating that democracy sacrifices or uses all processes to save the individual while systems like fascism "sacrifice persons to reified institutions."¹⁴ But that is exactly what we have done in our developed economic system.

III

IN THE FIELD of human relations, between nations, between races, between classes we are faced today with the necessity of important social and cultural changes, for the sake of the survival of our civilization. One of Karl Mannheim's main ideas in his brilliant analysis of "Man and Society in an Age of Reconstruction" is his concept of "social technique." The "practices and agencies which have as their ultimate aim the moulding of human behavior and of social relationships I shall describe . . . as social techniques."¹⁵ At that point Mannheim criticizes Marx for having seen "the dynamic significance of technique" only "in the sphere of production" and having overemphasized its importance according to the peculiar character of his time. Marx failed to recognize the significance of tech-

¹³ "Twentieth Century Sociology;" "Sociology of Economic Organization," by W. E. Moore, New York, 1945, p. 461.

¹⁴ Lyman Bryson, "Science and Freedom," New York, 1947, p. 75.

¹⁵ Karl Mannheim, "Man and Society in an Age of Reconstruction," New York, 1940, p. 247.

nology in non-economic fields and their rôle in social changes.¹⁶ "Modern social technique is a vital necessity for every large industrial society; it is equally important for its psychological, economic and industrial preservation."¹⁷

In order to understand Mannheim's advice to his contemporaries, which has become his legacy¹⁸ to the sociologists of our time, we have to get acquainted with his diagnosis and historical analysis in which he partly follows Durkheim. Mannheim distinguishes "three essential historical stages" which he describes as "(1) man at the stage of horde solidarity; (2) man at the stage of individual competition; (3) man at the stage of superindividual group solidarity."¹⁹

The first stage of human group life is characterized by what Durkheim calls "mechanical solidarity"; in a homogeneous horde the individual plays a rôle only as part of the whole, which adapts itself to the conditions of the environment.

On the second level, man is a part of "the world of individual competition" and he is aware of his own responsibility. He does not act like a submissive member of an all-powerful group any longer but he uses his own mind and acts according to his own decision. "Individual competition led to the emergence of subjective rationality. . . ."²⁰ Everybody cared only for himself without caring what became of society as a whole.

The last and contemporary stage, according to Mannheim, leads man into "superindividual group solidarity." In our present world, large groups, like large-scale industry and highly organized trade unions, have taken over the rôle of acting in society: "The individuals who until now have been increasingly separated from one another are compelled to renounce their private interests and to subordinate themselves to the interests of the larger units."²¹ The attitude of group solidarity is changing, forced by increasing group conflicts (between capital and labor and between nations), into an awareness of the need for planning. Even if today the individual still thinks only of the interests of his own group—Mannheim calls that a "biased-planning"—he is becoming more and more conscious of the need of planning for the whole of society, and not in the interest

¹⁶ We know now that not only Marx confused the aspirations of homo economicus with those of real human beings.

¹⁷ Mannheim, *ibid.*, p. 260.

¹⁸ Mannheim died in January, 1947.

¹⁹ Mannheim, *ibid.*, p. 68.

²⁰ *Ibid.*, p. 69.

²¹ *Ibid.*, p. 69.

of one group only. Mannheim believes that most of our social conflicts have their origin in the transition from *laissez-faire* to a planned society. Many social changes are due because of the transition from a democracy of the few to a "mass-society."

Mass production, made possible by mechanization of industry, raised the standard of living of a whole people and created the basis for mass education. Mass education is the foundation of a functioning political democracy, of the political freedom of the individual. But how can a society function without social conflicts as long as there is political freedom associated with depersonalization (*Verdinglichung*) and rational domination in the sphere of economic life?

We mentioned above one important finding of the most recent industrial research, that the worker's definition of the situation as a whole was essential. If we want to change rational domination into human relations in industry, we shall have to consider the industrial situation as a whole. We shall have to plan economic freedom in industry where at present both large groups, capital and labor or, better, management and labor, have been dominated by the output of production and the interest in impersonal efficiency.

Our liberal and democratic traditions can be used for mass education with more wisdom and success than nazism and fascism have shown. We have developed ideals of individual independence, attitudes of fair play and mutual consideration which used as "social technique" can help bring about that economic freedom in industry or economic democracy. The values of *laissez-faire* can only be saved by a new technique. "The old ideal of freedom," says Mannheim, "can only be attained by the technique of planning for freedom."²² In industry, collective freedom of all can only be secured by democratic planning. Mutual control can replace rational domination or bureaucratic control. How can co-operation and democracy supplant conflict and autocracy in our industrial organization?

At present an employer or management has greater freedom than the workers because the former determines goal and methods of production. "Apart from freedom to decide one's own destiny and dispose of one's own property, freedom will depend on the influence one is able to exert in determining the aims which are to be realized by collective action."²³ Possibility of self-expression is an important aspect of freedom. The industrial

²² *Ibid.*, p. 364.

²³ *Ibid.*, p. 373.

worker who has but to execute orders given him from above without understanding their significance for the enterprise as a whole or for his particular rôle in it, lacks this possibility. Social action is imposed upon him and is not the "result of a spontaneous discussion of situations and events."²⁴ In a democratic organization of industry, control can be established by consent rather than by authority. Division of labor, according to Mannheim, can be used as a "social mechanism" to bring about either obedience and submission or it may foster initiative, ability to take risks and responsibility. The social condition can be arranged to produce one or the other.

Roethlisberger and Dickson have given us as one of the most important results of their studies at Western Electric a great practical example of Mannheim's theory: in our modern industrial enterprise the worker is at the bottom of a highly stratified organization and has to accommodate himself to changes he does not originate. The communication between management and labor is usually a one-way street—from the top down. The experiment at Western Electric gave us the comparison of two working situations, the usual one just described in which the workers only execute orders and a new one in which the girls in the Relay Assembly Test Room were not only informed about the changes to be arranged in their working conditions but their judgments and feelings were taken into consideration. The girls participated actively in the organization of their work, they formed an informal friendship group among themselves; they felt very important, because they consciously participated and shared responsibility in an experiment aimed at improving the working situation in the enterprise as a whole. They worked freely without anxiety under new conditions: "It was fun to work," they said. The result of the experiment was an increase in the output rate of these girls which could not be explained by changes in their physical conditions of work but could be "related to what can only be spoken of as the development of an organized social group in a peculiar and effective relation with its supervisors."²⁵

The conflict that exists in the modern industrial enterprise between its technical and its social organization has been eliminated in this experiment by allowing the workers to use their informal group as "social mechanism" for the adjustment. In contrast to the usual development of informal groups among workers for the purpose of gaining security and for defend-

²⁴ *Ibid.*, p. 372.

²⁵ G. C. Homans, "Group Factors in Worker Productivity," in "Readings in Social Psychology," ed. by Th. M. Newcomb and E. L. Hartley, New York, 1947, p. 452.

ing their rights and interests against the demands of management, the informal group in the Relay Assembly Test Room was organized in co-operation with management in the pursuit of a common purpose.

In this example the result of the experiment was not only an increase of economic efficiency but also of the workers' psychological satisfaction. A different concept of efficiency will be decisive in "planning for freedom" in industry. "The psychological, social, and technical means applied should be judged by their effect on character and individuality as well as by their purely technical efficiency."²⁶ The Western Electric research shows that division of labor, used as a "social mechanism" according to Mannheim, can put human co-operation in the place of conflict by distributing responsibilities among the participating individuals following a definite plan worked out jointly. The fulfillment of the workers' desires for participation and for responsibility, for security and for social recognition, as formulated by an expert in industrial relations, is not only necessary to satisfy the workers' interest in self-realization but constitutes one of the "minimal conditions" for successful co-operation in an industrial organization.²⁷

Although technology has helped us to dominate our environment it has brought with it such complicated organizational relationships, that our energies have to be used more than ever before to adjust social relationships which otherwise lead to conflict and war. Natural causes have been largely replaced by social causes of calamity. We have learned, at least to a certain extent, to control nature; we have to learn to understand our human relations and to control them. We can create social conditions in industry where social adjustment is possible.

The industrial worker can be a human being *in* the industrial process as soon as democracy enters the man's working life. Economic democracy, like political democracy, serves to develop the human personality; but it can only serve man if man is not forgotten in the considerations of economic efficiency. In our contemporary stage of "superindividual group solidarity," of large-scale industry and highly organized labor unions, this economic democracy can be planned by all members of the industrial organization.

Durkheim's "*anomie*" can be overcome, social solidarity achieved if we

²⁶ Mannheim, *ibid.*, p. 267.

²⁷ See Douglas McGregor, Industrial Relations Section, Massachusetts Institute of Technology, "Getting Effective Leadership in the Industrial Organization," in *Advanced Management*, October-December, 1944.

use the division of labor in modern industry as a social device to plan successful human co-operation.

At the stage we have just reached [says Mannheim], it seems to be greater slavery to be able to do as we like in an unjust or badly organized society, than to accept the claims of planning in a healthy society which we ourselves have chosen. The realization that fair and democratic planning does not involve the surrender of our freedom is the mainspring of those arguments which show that an unplanned capitalist society is not the basis of the highest form of liberty.²⁸

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²⁸ Mannheim, *ibid.*, p. 377.

A Study of Control and Communication

PUBLICATION of Norbert Wiener's "Cybernetics" has been announced by the publisher, John Wiley & Sons, Inc. (194 pp., \$3). Subtitled "Control and Communication in the Animal and the Machine," the book describes the new science derived by the author and his associates during the last few years. "Cybernetics"—the name was coined from the Greek word meaning steersman—is the designation of the study of human control functions and the mechanico-electrical systems designed to replace them. Representing the meeting point of control and communications engineering, neurophysiology and psychology, Dr. Wiener's concepts may possibly express the operation of the human nervous system in a series of mathematical equations similar to those that explain electronic calculating machines. Long known to science as one of the leading mathematicians, Norbert Wiener received his doctorate in philosophy from Harvard at 18. A member of the faculty of the Massachusetts Institute of Technology, he is also a linguist, philosopher and student of literature. His writings on such subjects as assemblages and functions of a real variable, epistemology, trigonometric expansions, mathematical logic, relativity, quantum theory and the Fourier integral and its applications have been well received. As one of the few speculative books on science that have appeared in the United States, "Cybernetics" is of considerable scientific and intellectual interest. (Publisher's announcement.)

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