

THE SOCIAL IN THE TECHNICAL: EFFECTS ON WORKPLACE HEALTH AND SAFETY

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ABSTRACT

In every technical question there lies a social question. In the field of occupational health and safety, whenever a technical question arises – such as the acceptability of a level of contamination in the workplace, or the "safe" speed of a production line – there is implicit in it a social question: who decides that the risk at that level is acceptable? – or, what are the management-worker power relations in that plant?

In developing the central theme of the social in the technical, this paper deals, as well, with two other concepts: work at the centre, and the effect of the political economy on workplace conditions. The "work at the centre" concept is intended to replace the traditional liberal and public health concept, "man at the centre", which is the foundation of the dominant approach in occupational health and safety today. Finally, the "social in the technical" and "work at the centre" have their unique motion within a particular economy. That is, we must look at the whole question of worker's health and safety within the macro-economic and the political contexts, which tend to support capital formation without regard to worker's rights or self-defense.

These three concepts – the social in the technical, work at the centre, and the effect of the political economy on workplace conditions – are presented as ways of looking at the present underlying assumptions prevalent in the field of occupational health and safety. They are put forth to widen the scope of the existing dialogue regarding workplace conditions.

This paper asserts that worker's participation or direct involvement in changing working conditions – e.g. regarding organization of work or redesign of machinery to suit human needs – is basically an empirical question and not a political question. The exclusion of the "rights" question from conventional discussions of workplace health and safety problems has resulted in the complete monopolization of occupational health and safety by the various diverse professional groups who have shaped the field. The involvement of workers in a shared responsibility relationship can have important consequences in redirecting the existing trends. Supported by research in the social sciences, this paper advocates the need for such an alternative path. It is believed that the consideration of such data is necessary and reflects industrial reality better than more conventional approaches.

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risk at that level is acceptable?—or, what are the management-worker power relations in that plant?

In developing the topic of the social in the technical, I shall deal as well with two other concepts: work at the centre, and the political economy of occupational health and safety. The "work at the centre" concept is intended to replace the traditional liberal and public health concept, which might be called "man at the centre" and which is the foundation of the dominant approach in occupational health today. Finally, the "social in the technical" and "work at the centre" have their unique motion within a particular political economy. That is, we must look at the whole question of worker's health and safety within the macro-economic and political contexts, which tend to support capital formation without regard to workers' rights or self-defense.

The theme of the XIX International Congress on Occupational Health, "Occupational Health in the Humanization of Work", reflects some major recent world-wide trends in thinking about work. We are all familiar with, and have probably participated in, debates about quality of work life, job enrichment, industrial democracy, workers' control and (in Canada, especially) tripartism. In all of these discussions, I have always felt that you cannot discuss the humanization of working conditions without bringing in as a first priority the improvement of health and safety. There is one connotation of "humanization", however, which I would like to disclaim, and that is the paternalism implied in, for example, the "Human Approach" of the U.S. safety professional Dan Petersen⁸. Petersen and others of his persuasion really advocate management control and manipulation of workers, not workers' involvement.

The key to occupational health and safety in the humanization of work as I see it, and as it is approached in Saskatchewan, is worker participation or direct involvement in changing working conditions which affect the worker's health and safety. The Saskatchewan Occupational Health and Safety Act provides for three basic worker's rights: (1) the right to participate in decision-making regarding workplace health and safety through the establishment of worker-management health and safety committees, (2) the right to refuse to do what the worker believes to be an unsafe act, and (3) the right to know, through access to results of government inspections, workplace and hygiene surveys, etc. The third right has been strengthened recently through the passing of new regulations.

WORK AT THE CENTRE

In his book *Mirage of Health*⁵, the well known medical writer Rene Dubos points out that in the middle of the nineteenth century there were a number of approaches to medicine which have since been eclipsed by the germ theory and the clinical model, but which contributed greatly to the present state of medical science and which still have valid aspects today, despite their being neglected by conventional doctors. The clinical model of medicine, which rules supreme today, has the following characteristics, which when taken to extremes are its weaknesses: it is largely limited to single-cause thinking (specific etiology); it is

curative, not preventive, in orientation; it looks at the individual patient apart from his environment; it usually regards the single cause of a disease as lying within the individual (usually as a virulent microbe or a malfunctioning organ); at its most limited, it restricts its options to surgery and chemotherapy. The historical view reminds us that other approaches have borne fruit, such as those of the German health reformers Max von Pettenkofer and Rudolf Virchow. Virchow, for example, emphasized the control of crowd diseases and saw medicine as a social science. An historical perspective also allows us to see the persisting influence in North America of the Flexner Report of 1910, which placed great emphasis on the physical sciences in the training of medical doctors⁶. This emphasis may have been necessary at the time, but it has resulted in the neglect of the social science aspects of medicine throughout this century.

Medical doctors today, educated along the lines of the Flexner recommendations and subscribing to the clinical model almost exclusively, bring to occupational health a philosophy which results in what might be called the "man at the centre" view. This view reflects various liberal assumptions such as individualism and free choice; it treats the public as if it were made up exclusively of middle class individuals with considerable financial independence. The man-at-the-centre model depicts the worker at the centre of an infinite number of influences all impinging on him at once, only one of which is work. It never looks at workplace conditions as a cause of the worker's health problems, but only at the worker, thus tending toward an attitude of blaming the victim. In the context of public health or occupational health on the social level, that is in terms of large numbers of workers, it collapses: there is so much to do that nothing is done. Man-at-the-centre touts a liberal philosophy of free will on the individual level, but it results in paralysis of the will on the level of social administration.

The weaknesses of man-at-the-centre and the traditional doctor-patient relationship, in terms of occupational health, are illustrated by the almost accidental nature of Selikoff's discovery of asbestos as a causal agent in lung cancer and other lung diseases¹. It was by chance that 17 men exposed to asbestos dust in the factory where they worked were referred to Dr Selikoff. If these 17 individuals had gone to 17 different lung specialists, none of the doctors, in looking at an isolated case, would have placed much importance on the workplace as a causal factor.

The work-at-the-centre approach, by contrast, centres on the physical and social framework of occupational disease, the workplace, not on the individual. It is only with such an emphasis that occupational health can hope to be preventive and not merely curative. Work-at-the-centre advocates changing working conditions for the better, not blaming the victim for misfortunes which are not his fault but the fault of the work environment. According to this model, occupational health and safety is intrinsic, not extrinsic to the nature of work, because the worker is seen in his work environment. The model is not limited to a theory of specific etiology: if a worker suffering from a lung disease is a heavy smoker, this single causal factor does not automatically eliminate the possibility of his workplace environment as another causal factor.

THE SOCIAL IN THE TECHNICAL

The second concept which I would like to develop, and which provides the title for this paper, is the "social in the technical". Work and the workplace produce not only commodities but human behaviour and attitudes as well. Eric Trist, formerly of the Tavistock Institute in England, has expressed his belief that "a society is no better than the quality of the people it produces" and often reiterates what was a Tavistock basic concept - "the product of work is people"¹⁰.

The concept of the social-in-the-technical applies on two levels, the "macro" level or society as a whole, and the "micro" or plant level. On both levels it rejects technological determinism. On the plant level, as Eric Trist has stated, "we know from experience that technology can be changed. We have learned in the quality-of-working-life enterprise not to accept the technological imperative"¹¹. On the macro level, the main point is that our society is not the product of impersonal technological forces, but of an accumulation of decisions made by certain social class interests who share power and a common set of values which they assert are in the public interest. The social-in-the-technical on the macro level is closely related to the concept of the political economy, which will be developed in the last section of this paper.

On the micro level, the concept of the social-in-the technical points up the importance of social factors in the workplace. An English investigation into aspects of industrial accidents, by Cronin² found some indications that the accident rate is a function of "a special aspect of industrial relations: communications and participation". Another English study, by Theo Nichols and Pete Armstrong⁷, found that social factors such as a tendency of management to demand speed-ups in production and to look the other way when workers are thereby forced to cut corners by violating safe practices, are major causes of industrial accidents. What is really involved here, in the social-in-the-technical on the plant level, is a moral concept; if I may paraphrase the Kantian categorical imperative - "Treat no man as a means only but always as an end in himself." Workers are quick to detect any hypocrisy in management's voiced concern for safety and the welfare of the worker.

I believe the concept of the social-in-the-technical goes a long way towards explaining the results of behavioral modification (B-Mod) experiments in the workplace. One recent experiment has been written up in the *Journal of Safety Research*⁹. The authors tell how in a certain U.S. shipyard supervisors were able to "effectively use social rewards to improve employee safety performance". In order to be scientifically acceptable the experiment was carried out and written up according to the theories of B.F. Skinner. In order to be acceptable to managers, the approach was described in terms of "controlling" workers' behaviour. I believe, however, the results can be explained simply in terms of what Cronin was groping towards when he speculated that the accident rate is "a special aspect of industrial relations: communications and participation"; and what I would call the social-in-the-technical. The supervisors were simply treating the workers as moral entities, instead of mere production units. The

write-up concludes: "One of the most significant aspects of this study goes beyond the improvement in eye injury performance by the experimental crews. The social incentive of praise not only improved safety performance, it also perceptibly improved the human relations atmosphere of the work setting...." I believe that such an approach, because it is based on a manipulative philosophy and not on a moral principle, while it represents a vast improvement over "negative incentives" or overt coercion, will eventually be seen through by the workers for the control mechanism that it is, and at that point, resisted. The initial success of this shipyard experiment is probably just another instance of the "Hawthorne effect", whereby an apparently successful application of a manipulative psychological theory is ultimately seen in terms of the common sense truism that people work better if you take an interest in them.

The concept of the social-in-the-technical would have been more useful in the case of the U.S. shipyard referred to because it goes hand-in-hand with the work-at-the-centre approach. Let us look again at the published results of the experiment. While management was concentrating on B-Mod and the positive incentive of praise, they were obviously ignoring what my work-at-the-centre approach would clearly point up, and what any worker would be able to tell them: the workplace required major refurbishing. The authors write: "The working conditions were of poor quality, including a large number of environmental hazards (excessive noise and heat, machinery hazards, poor housekeeping, etc.)". In the same paragraph, the authors describe what illustrates my concept of the social-in-the-technical: "The workforce.... had a high turnover rate.... In addition, relations between the workers and management were generally poor. (A strike occurred a short time after the study started)." If management could have seen how the social-in-the-technical and work-at-the-centre go together, they would have been willing to ask members of their "poorly educated" workforce for suggestions for improving workplace conditions. Improving workplace conditions may have prevented the strike, and thus have actually saved the company money. I believe that treating workers as intelligent humans, asking (and using) their advice on the need for improving workplace conditions, and focusing on work-at-the-centre to improve the workplace instead of blaming the victims, all will lead to better industrial relations (the social-in-the-technical).

In a brief paper I cannot expand on all the implications of the social-in-the-technical, but there is more to it than improving industrial relations, important as that is. For example, it has much to do with industrial design and with ergonomics – with having safety built into equipment at the design stage and with fitting the machine to the man, and not the man to the machine. At this point, however, I shall go on to the third concept of this paper, the political economy of occupational health and safety.

THE POLITICAL ECONOMY OF OCCUPATIONAL HEALTH AND SAFETY

The political economy of occupational health and safety has been touched upon already in my brief mention of the social-in-the-technical on the macro

level. That is, certain dominant class interests have shaped the evolution of North American society, guiding the direction and priorities of technological development. The avowed purpose of North American business is profit maximization. Despite such slogans as "Safety Pays," when safety and profits come into conflict (and they usually do), management will tend to opt for profits. That is the economic side of it. The political aspect is clearly seen in terms of the government which passes regulatory laws and the governmental regulatory agency which enforces occupational health and safety regulations. In North America the dominant political parties tend to respond to the powerful business interests.

There is some reluctance in North America to speak of the political economy. This is partly the result of the separation of political science and economics in the universities, but there is more to it than a mere academic convention. North American society is supposedly based on high-minded Judaeo-Christian ethical principles and egalitarian and democratic political principles. But the accepted economic model of man is totally amoral. Consequently, business leaders, realizing that self-seeking profit maximization can easily be represented by their opponents as immoral or contrary to the public interest, retreat into "public relations" stances, compromise and hypocrisy.

In a study for the Science Council of Canada, G. Bruce Doern comments on this lack of frankness as it applies to the political economy of occupational health and safety⁴. He calls the regulation of hazardous products "the soft underbelly of economic regulation" and decries the evasive attitude which labels it as merely "social regulation." He says that industrial spokesmen try to evade the issue of who is going to pay for needed health and safety improvements by calling for more research.

There is another aspect of the political economy – or more particularly, the economic side of it – which I would like to comment on, and that is the effect of economic cycles. Traditionally, we can expect little progress to be made by labour in industrial relations when the economy is at a low point. Consequently, once we learn to see occupational health and safety in an industrial relations context, we would expect to see little progress in this area during a recession. In the light of this, there is something apparently anomalous in the recent Canadian experience in the health and safety field. We seem to be in a climate of reform across the country, provincially and federally. Yet the economy is at a low point. On this point, G. Bruce Doern has commented: "I sincerely hope it is not true that Federal occupational health and safety legislation is politically being presented as a kind of consolation prize for the failure to be able to deal more substantively on the traditional front of industrial relations, namely wage and price controls"³.

The analysis which leads to the conclusion "No health and safety reforms during a recession" is primarily an economic one. If we remind ourselves that we are dealing, in any real situation, not with a "pure" economic problem but with the political economy, we will not forget to look for a political factor. This brings us to another point which Doern makes in his Science Council of Canada

study: the Canadian federal government is responding to political pressures. These are not only from provincial governments but also from Canadian labour. So the provincial governments that are calling for reform must not be content with a mere "consolation prize" but must press for substantive health and safety reforms. Similarly, I am sure the Canadian labour movement will welcome real occupational health and safety reforms, but will scrutinize any apparent concessions in this area very carefully; moreover, they will not forget about the wage and price controls issue.

Viewing occupational health and safety from the perspective of the political economy enables us to see it in terms of the historic struggle for workers' rights. Again I quote Bruce Doern: "Occupational health issues are in one sense part of the second historical phase of the reform of industrial relations. The first phase dealt with traditional economic needs and the right to bargain collectively. The second and current phase is concentrated on concern for overall industrial democracy, including economic health rights and how to take them out of the raw bargaining environment in which they have been historically (but regrettably) lodged."⁴

The conclusions of the Science Council of Canada study authored by Bruce Doern state that hazard control must begin in the workplace (work-at-the-centre) because of the nature of the political economy, and recommend a legal policy based largely on the Saskatchewan-Alberta-Manitoba model. The study recommends the three features of the Saskatchewan approach which I mentioned at the beginning of this paper, which I regard as three fundamental worker's rights: (1) the right to participate (compulsory labour-management health and safety committees); (2) the right to refuse (i.e. to refuse to work, without financial penalty, if workers feel the work environment endangers their health or safety); and (3) the right to know (in the words of the study, "the right to receive information on compliance or other conditions of health produced by or with regulatory authorities and management").

In conclusion, it has been the Saskatchewan experience, and I believe that it is generally true, that progress in occupational health and safety reforms must come from three basic concepts: work-at-the-centre (whereby workplace hazards will be remedied instead of workers blamed); the social-in-the-technical (whereby true humanization of the social environment will take place, and not mere manipulation, no matter how benign); and the political economy of occupational health and safety (whereby the realities of political and economic factors will be seen clearly as the major limiting factors they are, so that they may be better overcome).

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