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Why study working conditions via job satisfaction ?

A plea for direct analysis

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In recent years the governments of the industrialised Western countries have greatly broadened their traditional but limited preoccupation with safeguarding the workers' health and have begun to concern themselves with improving the quality of working life in general. A number of theories have been advanced to explain this development, but there is no doubt that, to a large extent, it is due to the alarm which a certain disaffection towards industrial work is causing among both employers and governments. To overcome this malaise would enable individual enterprises and industrial society as a whole:

— to avoid such manifestations of alienation as absenteeism and rapid labour turnover (which cost enterprises a great deal of money) and build up a more stable workforce;

— to achieve better productivity and quality standards;

— to make more efficient use of human resources;

— to forestall fundamental criticism of industrial society, in particular by young people who are less willing to accept bad working conditions.

All this helps to explain why job satisfaction and quality of working life are often considered to be the same thing. Thus an article on the 1973 job satisfaction survey in the United States was entitled " Evaluating working conditions in America ".[2] Similarly, Henderson, in his report on social indicators to the Economic Council of Canada, proposes measuring the quality of

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[2] Robert P. Quinn, Thomas W. Mangione and Martha S. Baldi de Mandilovitch: " Evaluating working conditions in America ", in *Monthly Labor Review* (Washington, US Department of Labor), Nov. 1973, pp. 32-41.

working life with indices of job satisfaction.[1] An OECD report also equates the quality of working conditions with the satisfaction they produce.[2]

In the following pages, then, we shall be considering whether the quality of working life can be assimilated to job satisfaction, and whether measuring and improving the one are tantamount to measuring and improving the other.

Job satisfaction surveys and their interpretation

At the present time many voices are calling for the organisation of regular job satisfaction surveys [3] in order to supplement the data we already possess on industrial accidents, occupational diseases, wages, employment and the like. It is argued that the collection of " objective " data of this sort is now so well established and sophisticated that little further progress can be expected from that quarter, while on the other hand it is high time that the workers themselves were asked for their views, as a basis for drawing up appropriate policies and priority objectives.[4] Carried to its logical conclusion, this line of argument suggests that what matters is not so much whether working conditions are bad in themselves, but whether people *think* they are. Psychological or subjective reality, it is pointed out, often plays a larger part in sparking off disputes or mass protests than objective reality. Hence the importance of satisfaction surveys: forewarned is forearmed.

However, the measurement of a subjective reality such as job satisfaction raises many problems. Broadly speaking, satisfaction may be defined as the relation between what one expects and what one obtains; a kind of over-all balance sheet. In order to find out whether people are happy at their work, therefore, it is best to ask them a general question such as: " Taking everything into account, are you satisfied with your job? " Instead of a simple yes or no answer, the respondent can of course be given a range of choices such as very satisfied, fairly satisfied, fairly dissatisfied or very dissatisfied. One can also ask a number of related questions and attempt to construct an index from the replies. For example: " If you had the choice, would you keep your present job or do something different? " In such cases, however, the reply raises a number of awkward problems of interpretation—it may be as much a measure of the respondent's power of imagination as of the satisfaction he gets from his work. Again, apparently similar questions may elicit different responses for no obvious reason.

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[1] D. W. Henderson: *Social indicators : a rationale and research framework* (Ottawa, Information Canada, 1974), pp. 27, 49 and 78.

[2] OECD, Manpower and Social Affairs Directorate: *Problems of the internal industrial environment : job satisfaction* (Paris, 1972; doc. DIE/IND/72.42 MS/D/72.114), p. 2.

[3] See, in particular, N. A. B. Wilson: *On the quality of working life*, Department of Employment, Manpower Papers No. 7 (London, HM Stationery Office, 1973), p. 46.

[4] University of Michigan, Survey Research Center: *Survey of working conditions : final report on univariate and bivariate tables* (Washington, US Government Printing Office, 1971), p. 3.

In order to understand and interpret the replies to a general question concerning job satisfaction, it is necessary to examine how the level of satisfaction reported is affected by the various aspects of the work situation. This has been done, for example, in the surveys carried out in the United States, which include a wealth of questions on fringe benefits, health and safety, travel to and from work, hours of work and their scheduling, income, steady employment, physical working conditions, relations with fellow workers and superiors, work speeds, etc. The choice of questions depends on the preoccupations of the authorities and on previous work in the same field.

Despite the wide range of information collected, and refined methods of statistical calculation, however, the results seem difficult to interpret. This is particularly noticeable if we compare the results of the major surveys carried out in 1969 and 1973.[1] In both surveys an identical proportion (39 per cent) of the workers questioned complained of the inadequacy of fringe benefits, although a great deal of progress had been made in this respect in the meantime. Similarly, the improvements that had been made in working hours and the numerous and well publicised experiments in job enlargement and job enrichment had no effect on the statistics. On the other hand, whereas it had been expected that on account of the decline in the purchasing power of the dollar more employees would be dissatisfied with their incomes in 1973, in fact the number expressing dissatisfaction fell from 26 per cent in 1969 to 21 per cent. In the 1969 survey 8 per cent of women workers considered that they suffered sexual discrimination in their work, compared with 13 per cent in 1973. Manifestly, this increase did not stem from any growth in discrimination but from increasingly widespread awareness of it, as can be seen from the fact that most of the complaints about discrimination came from women who were the least subject to it—those who were active in the feminist movement and better educated women in higher status occupations.[2]

In most cases the replies were identical in 1969 and 1973. One might imagine the reason for this to be that a four-year period is not very long, but this appears to have nothing to do with it since, during the 40 years that the question: " Are you satisfied with your job? " has been asked, the proportion of affirmative answers has remained fairly steady at rather more than 80 per cent.[3] This stability of response in the face of changing conditions of work suggests that the employee has a profound need to prove that he has succeeded in adapting himself satisfactorily to his working environment.[4] Thus, as Portigal puts it, " it is unclear whether the 80-90 per cent of United States

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[1] See Quinn et al., op. cit.

[2] Ibid., p. 38; and University of Michigan: *Survey of working conditions . . .*, op. cit., p. 420.

[3] See for example A. Touraine: *La conscience ouvrière* (Paris, Editions du Seuil, 1966), p. 10; and Alan H. Portigal: *Individual satisfaction with the experience of working life* (Paris, OECD, 1974; doc. SI/74), pp. 4 and 20.

[4] Jack Barbash: *Job satisfaction, attitudes surveys* (Paris, OECD, 1974; doc. MS/IR/74.31).

workers who have represented themselves as being at least moderately satisfied with their work in a long series of surveys represents grounds for complacency or alarm ".[1]

This difficulty in knowing what one has really measured with satisfaction surveys means that they provide an unreliable basis for the prevention of industrial disputes or social conflict. Such troubles generally arise from sudden changes in mass attitudes which it is difficult to forecast by means of opinion surveys conducted among individuals. In France, for example, certain enterprises which were occupied by their employees in May and June 1968 had been covered by surveys of this sort only a few months earlier, but there had been nothing to suggest what was about to happen and everyone was taken completely by surprise.[2]

However, the replies are not purely random and impossible to interpret. The percentage of satisfied persons is lower among young people, women, Blacks (in the United States), blue-collar workers, the least skilled and lowest graded, assembly-line workers, and so on. But once this has been established there is obviously no point in conducting more surveys to prove it all over again. Further research is only justified if it helps us to understand *why* people say they are satisfied or dissatisfied. For the purposes of this article we shall distinguish between the scientific desirability of being able to explain what satisfaction or dissatisfaction is due to on the one hand, and on the other the practical consequences that research of this sort can have on the formulation of policy for the improvement of working conditions.

Satisfaction models

In order to interpret the replies to satisfaction surveys we need models. Here we shall simply recapitulate the main explanatory variables of satisfaction as presented by Liu.[3]

Individual characteristics such as age, sex, level of education, job experience, family situation and personality traits obviously play an important part.

The individual's social environment also affects his view of work. A whole range of factors come into play, for example upbringing, type of education, the state of the labour market (e.g. high or low unemployment), existence of a work " ethic ", and prevailing views about industrial society.

Between them, these two sets of factors determine *the individual's attitude to work*. He may look upon it in a purely instrumental way as an unavoidable chore only rendered tolerable by the wage received in return, while all his hopes

[1] Alan H. Portigal: *Individual satisfaction with the experience of working life* (Paris, OECD, 1974; doc. SI/85.I), p. 7.

[2] See Barbash, op. cit.

[3] See M. Liu: *Controverses et perspectives dans l'étude de la satisfaction au travail*, document de travail 72-27 (Brussels, Institut européen de recherches et d'études supérieures en management, 1972).

and interests are directed to his life outside the enterprise. On the other hand, he may attach great importance to the content of his job, to social relations at his place of work, and to the possibilities of promotion and prestige inherent in the job. Clearly, if he takes an instrumental view of his work he will expect and demand much less from it than in the second case.

To the above individual characteristics and social environment factors, which are external to the job, must be added *the job components themselves.* These are the matters normally covered by satisfaction surveys, for example remuneration, fringe benefits, health and the physical environment, safety, work speeds, intrinsic interest, human relations, scope for initiative, promotion prospects, and so on. *The characteristics of the enterprise* such as its size, technological level, reputation, management " style " and industrial relations must also be taken into account.

The individual's attitude to work, the job components and the characteristics of the enterprise enter into the calculations which he makes, or which we suppose he makes, when he is asked whether he is satisfied or not. Among the factors he weighs up are his expectations and the extent to which they are realised, the relative value he attaches to the advantages and drawbacks of the job, and various personal adaptations such as when he lowers his expectations in order to lessen the feeling of dissatisfaction or, on the contrary, raises them as new goals seem to come within his reach (see diagram).

The degree of satisfaction or dissatisfaction reported therefore depends on a wide range of variables. Drawing on the results of the 1969 American survey, Seashore [1] found that three groups of variables explained the variance in job satisfaction responses in the following approximate proportions:

— stable objective characteristics of the job situation—40 per cent;

— relatively stable demographic and personality attributes—20 per cent;

— unstable demographic and personality attributes—20 per cent.

The remaining 20 per cent, representing measurement errors, was not explainable.

Seashore concedes that these are " highly speculative percentages ", and he notes that the data from the 1969 survey suggest that the figure for objective characteristics of the job situation should really be 53 per cent. However, since the supposedly objective measurements used in the survey were based only on workers' opinions, the author arbitrarily reduced the figure to a more conservative 40 per cent while admitting that the true percentage could equally well be 30 or 70 per cent. What does emerge clearly from all this is that working conditions only account for part of the job satisfaction response, so that measuring job satisfaction does not necessarily tell us very much about the quality of working life. We shall return to this question below.

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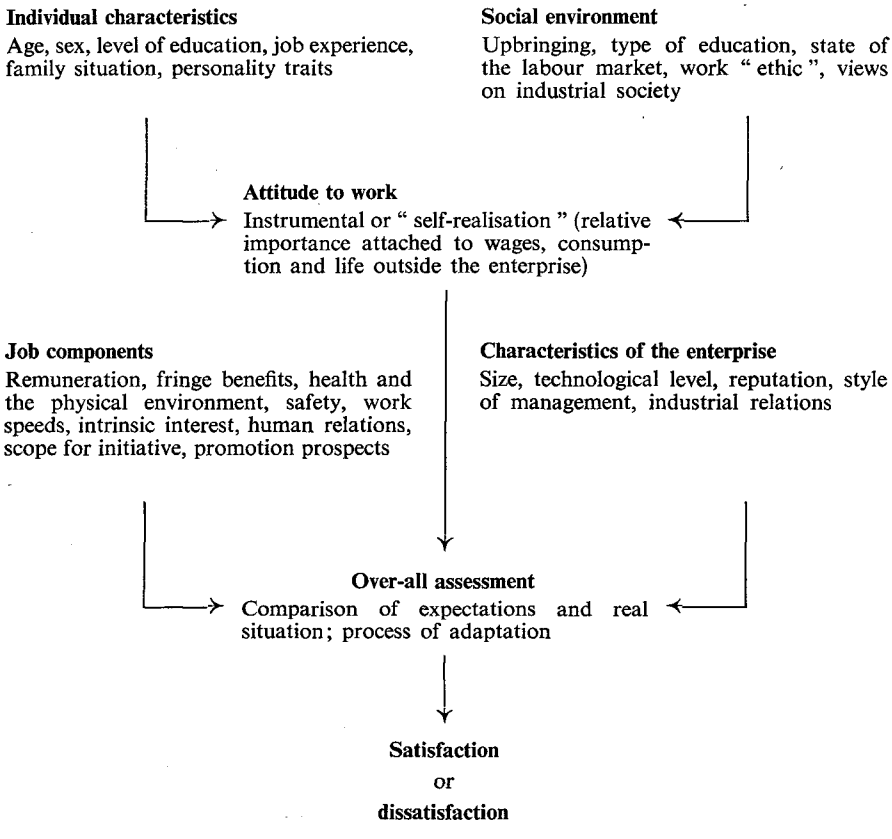
[1] Stanley E. Seashore: *Defining and measuring the quality of working life,* Paper submitted to the International Conference on the Quality of Working Life, Harriman, New York, 1972.

Factors contributing to job satisfaction or dissatisfation



With regard to the diagram, it should be noted that while it appears to be linear there is in practice much interaction between the various elements. For example, if the organisation of work is of the type proposed by Taylor and based on the idea that all people require is the stick and the carrot, in other words that their work motivation depends on incentives and checks, they will take a more instrumental view of their work. On the other hand, the type of organisation which relies on workers' co-operation and gives them more responsibility will increase their interest in the work itself and reduce the relative importance attached to wages and life outside the enterprise. Again, if employees are very dissatisfied, they may reduce the disparity between their expectations and the actual state of affairs either by lowering their sights or by trying to improve the work situation. So it may be that measuring job dissatisfaction at

any given moment tells us more about the symptoms than about the malady itself.

Any claim to explain the satisfaction or dissatisfaction expressed by an individual or group presupposes knowing how these variables act and interact. This may be possible if the field of research is limited to certain groups of employees.[1] But if the sample is extended to cover all categories of employees or job situations we lose in comprehension what we gain in coverage. After all, what is the significance of statistical calculations which embrace different occupational categories, regions and cultural backgrounds? There is nothing to prevent us carrying out factorial analyses or correlations, but how reliable will they be unless the samples are chosen according to clearly defined guidelines?

The large-scale American surveys contain a good deal of personal data on the respondents and, as we have seen, reveal significant differences according to sex, age, level of education, etc., but there are no details concerning the individual's social environment or the characteristics of the enterprise in which he is employed. Pride of place therefore seems to be given to the individual approach, to psychology as opposed to sociology; or, again, to the " economic " doctrine that satisfaction results from the conviction that one's labour is properly rewarded.[2] However, the individual is not an isolated, abstract being: he is situated in place and time, and his degree of satisfaction or dissatisfaction may be explained by membership of some social group, by his employment at a particular enterprise, or by the fact that he has received a different type of education. Thus we find very different reactions between two groups of young women in the same city who changed over from routine clerical work to the punching of computer cards. One group saw the new work as conferring a good deal of prestige while the other saw it as a dead end reserved for uneducated girls.[3] When Seashore sought to evaluate the variables explaining the variance in the 1969 American survey, therefore, he had only individual characteristics to go on, inasmuch as the individuals had not been situated in their social or working environment. This kind of statistical study in fact leaves out an essential dimension of the problem.

Even the notion of satisfaction is unclear. According to Herzberg, for example, the individual has to make not just one but two parallel assessments of the situation. The first group of factors considered—those associated with the job itself—are concerned with the concept of self-realisation and may lead to positive satisfaction, whereas the second group of factors are concerned with conditions " that *surround* the doing of the job "—physical working conditions, wages, personnel policy, interpersonal relations, etc.—and may lead to dis-

[1] See Stanley E. Seashore: " Assessing the quality of working life: the US experience ", in *Labour and Society* (Geneva, International Institute for Labour Studies), Apr. 1976, pp. 69-79.

[2] Touraine, op. cit., pp. 12, 26 and 306-307.

[3] See Wilson, op. cit., p. 25.

satisfaction or the prevention of dissatisfaction but not to satisfaction as such.[1] Clearly, both the questions asked and the interpretation of the replies will be very different according to whether or not one accepts this premise. It is noteworthy that in the 1969 American survey, which presupposes that the worker makes a single over-all assessment, the most satisfied respondents were not those who had no problems at work, while those who stated that they had few problems did not necessarily report a high degree of satisfaction.[2]

Attempts to probe the attitudes of a nation's working population in the same sort of way that candidates in presidential elections sound public opinion seem rather dubious. In the case of elections the object is to ascertain the answer to a simple, clearly defined question, namely will the elector vote for this candidate or the other? In the case of satisfaction surveys, as just pointed out, it is not even really clear what is being measured. The question: " Will you vote for this or that candidate? " is clear. The question: " Are you satisfied with your job? " is not. Moreover, the reasons for an affirmative reply may be very diverse and the interactions of the explanatory variables are not the same for a senior manager and an unskilled workman, for a housewife and a career woman, for an immigrant and the son of a supervisor, and so on.

Direct analysis of working conditions

So far we have been considering satisfaction surveys from a scientific point of view, whereas the current enthusiasm for this kind of research is due rather to the practical help it is supposed to provide to governments drawing up their economic and social plans.[3] Indeed, one of the main aims of the American surveys is to find out what employees think about various aspects of their working conditions so that the Administration can define priorities in this field.[4] As the authors of the survey report point out, however, the data offer a very complicated answer to a very complicated question.[5] Had the most frequently occurring problems also been the most severe ones, they write, and had these been the ones workers most wanted to be protected against, very clear-cut conclusions could have been drawn concerning the legislative or programme priorities that might be assigned to such problems. But this was not the case, and the authors resisted the temptation to develop a single index combining frequency, severity and " protection value ": to determine that such and such a percentage of workers reporting a problem could be regarded as equivalent to a certain severity rating would, they argued, be like determining how many colds could be regarded as equivalent to one case of fatal lung cancer.

[1] Frederick Herzberg, Bernard Mausner and Barbara Bloch Snyderman: *The motivation to work* (New York, John Wiley and Sons; London, Chapman and Hall, 2nd ed., 1959), Ch. 12.

[2] University of Michigan: *Survey of working conditions . . .*, op. cit., pp. 411-412.

[3] Barbash, op. cit., p. 1.

[4] University of Michigan: *Survey of working conditions . . .*, op. cit., pp. 30, 86 and 103-104.

[5] Ibid., p. 414.

In this they are certainly right, because the establishment of such parities is a question of moral and political choice. However, this reasoning could be taken further. After all, why should the opinions expressed by employees in surveys of this kind largely determine the measures taken to improve working conditions? As Seashore remarked, " in our studies of the quality of working life, individuals can and do report satisfaction with work situations that we know (from information not accessible to the respondents) are abbreviating their lives, threatening their family relationships, and unnecessarily narrowing their future life options ".[1]

Another relevant question is why we need to worry so much about increasing satisfaction. If the satisfaction workers report is the result of adapting to an unpleasant situation by ignoring it or by scaling down their expectations, is this a cause for rejoicing? Surely not: discontent leading to improvement would be much preferable to resignation. Satisfaction is therefore not an end in itself: we need to know the cost at which it has been bought.

Thus all this interest in workers' job satisfaction is suspect, as though it was hoped to avert trouble by tackling the difficulties they perceive while neglecting far more serious problems of which they are not aware. It is these latter problems—which threaten the workers' health, their personal development and their social life—that are really important; hence the desirability of studying the work situation itself and of investigating what dangers it may present in the light of our present knowledge. This is the object of several methods of analysis that endeavour to quantify various aspects of working conditions.

The method developed by the Laboratoire d'économie et de sociologie du travail (LEST),[2] which is valid only for manual work, assesses the physical environment (temperature, noise, lighting, vibration), working posture, energy expenditure, and mental strain with its attendant risks of nervous fatigue; in other words anything which can endanger the worker's health or his physical and nervous equilibrium. These are all subjects covered by traditional ergonomics and are germane to the study of workloads. An attempt is also made to find out how much autonomy the employee has in his work and to what extent it involves social relations. Here the emphasis is not so much on hazards to the worker's health as on the danger that isolated, fragmented and repetitive work may diminish his powers of imagination, reasoning and communication.

The aim is to establish a score ranging from 0 to 10 (the latter being the worst grading) for each of some 15 aspects of working conditions. Guidelines specify all the features of a job which should be examined in order to obtain the grading. The advantage of this method is that it imposes a certain rigour, leaves little room for subjective appreciation, and facilitates comparison over time or between particular jobs both in the same and in different enterprises.

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[1] Seashore: *Defining and measuring the quality of working life*, op. cit. pp. 3-4.

[2] See F. Guélaud, M. N. Beauchesne, J. Gautrat and G. Roustang: *Pour une analyse des conditions du travail ouvrier dans l'entreprise*, recherche du Laboratoire d'économie et de sociologie du travail, CNRS, Aix-en-Provence (Paris, Armand Colin, 1975).

The idea is to obtain an over-all view of the main harmful effects of given jobs on the basis of an analysis which will seem overcomplicated to the layman and oversimplified to the ergonomist. Roughly speaking it takes two or three hours to study a job by this method; naturally a more detailed analysis will be necessary in many cases. For example, the method only takes into account certain characteristic postures, whereas many workers have to adopt some very unusual ones. Without being in any way exhaustive, it does make it possible to draw the attention of technicians and workers to certain harmful effects of which they may not be aware. In one factory where we were training people in the use of the method, for example, the works doctor voiced his astonishment that the workers never complained of noise levels which would inevitably lead to loss of hearing in a few years. But it was only behind the scenes and in confidence that he told us that the audiograms he had been making at regular intervals proved the rapid onset of deafness. He had pleaded in vain with the management to install sound insulation. The technicians of the same enterprise wanted us to record sound levels in the quieter workshops so that the workers would not become " alarmed " about the noise problem. One cannot but marvel at the mentality of people who deprive workers of vital information and are then surprised at their unawareness of the danger.

Without the over-all picture that the method enables one to obtain of the main shortcomings in the work situation it would be impossible to undertake the search for solutions and the adoption of a programme mobilising the human and financial resources of the enterprise. Attempts to improve some particular aspect of working conditions, either because of failure to take an over-all view or on the pretext that certain problems are insoluble (whereas in fact they have not even been studied), should be regarded with suspicion. The proper procedure is to observe working conditions as a whole and to disseminate the information thus obtained throughout the enterprise so that it may be taken into account in decisions relating, for example, to the design of buildings, the purchase of equipment or raw materials, the design of products, methods of organising work, and even the workers' programme of demands.

The method of analysis used is based on the present state of knowledge in fields such as occupational physiology, psychology and psychosociology. However, the need to study a large number of jobs in a short space of time and to bring the method into widespread use without having to undertake advanced training led us to opt for fairly simple means of observation. Naturally recourse is had to a sound level meter, but in estimating the expenditure of energy there is no direct measurement of cardiac function, respiratory flow or oxygen intake; instead, indirect measures are used based on average energy expenditure for various types of effort according to the groups of muscles used and the intensity of the effort demanded of them. In the case of psychosociological factors, also, the indicators are rather limited, inasmuch as they call for only rapid observations and leave very little room for interpretation by the interviewer. By the same logic, there is no attempt to evaluate the quality of management-labour relations or of management " style ". We simply

ascertain whether a worker can speak to those around him and whether he is required to take decisions concerning his job in consultation with his fellow workers.

The grading of some 15 aspects of working conditions with scores ranging from 0 to 10 presupposes a system of standards which, however, does not have the same significance in every field. In the case of noise the score naturally increases as a function of intensity, frequency and period of exposure. For energy expenditure the criterion is the number of kilocalories used per day, but the decision to award a score of 10 points to jobs calling for an expenditure of 1,950 kilocalories or more in the case of men and 1,650 or more in the case of women is admittedly open to argument. As there is no way of directly measuring mental strain and the dangers of nervous fatigue, the proposed indicators seek merely to rank different jobs in their correct order according to the relative amounts of nervous fatigue they entail. With respect to mental strain it should be emphasised that we have only concerned ourselves with repetitive work. The psychosociological indicators also seek only to rank jobs, not to measure them. For example, a score of 10 corresponds to the complete absence of initiative, a situation where the employee cannot in any way organise his work or modify the sequence of operations, where the rate of work is imposed by the assembly line or the machine, and where he does not regulate his machine or have any control over the quality of production.

Certain of these standards may be modified in accordance with new scientific knowledge, the characteristics of a population (what is considered a normal expenditure of energy may not be the same in all countries or at all times), a social consensus, or simply progress.

The method is designed to investigate the demands made by a job, as well as its drawbacks and constraints, independently of the personal capacities of the worker performing it. Thus a job scoring 10 for expenditure of energy will not impose an excessive strain on a very strong man, while one scoring 10 for awkward posture will not generally present much difficulty to a young worker. The whole question of the selection and aptitude of individuals for particular jobs is left out of account, the method concentrating on the analysis of working conditions with a view to their improvement.

This aim also explains why the different aspects are rated separately and no attempt is made to produce an over-all index for a job. The fact is that our present state of knowledge enables us to form an idea of the dangers inherent in given levels of noise or heat, in prolonged awkward postures or excessively fast rates of work, etc., but we know very little about the combined effect of several factors. In the majority of cases it is impossible to arrive at a composite score for even two aspects of working conditions. This differentiates the method fundamentally from all job evaluation systems where weightings are given to the various factors studied (e.g. environmental hazards, physical strength required, level of skill, experience and responsibility) in order to reach a score on which the worker's remuneration depends.

Involving the workers

Having examined the difficulty of interpreting the results of job satisfaction surveys and demonstrated that it is impossible to identify satisfaction with the quality of working life, we have argued in favour of direct investigation of working conditions. A policy of improving working conditions should not be designed merely to forestall manifestations of discontent on the part of workers with a view to keeping the plant running smoothly; it should also seek to eliminate hazards of which, for lack of information, the workers may not be aware, or to which they may have become resigned.

The criticism might be advanced that we are seeking to improve the lot of the workers over their heads, whereas satisfaction surveys at least take account of their views on the matter. A first reply to this objection might be that there are many examples of legislation protecting the interests of citizens against their will. Just as we seek to limit the use of drugs against the will of the addicts, it would seem normal enough to legislate against the principal hazards that workers have to face. However, labour legislation cannot hope to regulate all the problems of working life, and we have no desire to minimise the objection. There is indeed a clear danger that, applied in a certain way, the LEST method could widen the gap between executive and operative staff. Obviously, there is nothing to stop work study departments taking a variety of other parameters into account with a view to designing jobs that are more satisfactory from several points of view. But it may well be thought that all this is no remedy to what, for some, is the main defect of the industrial system, namely the impossibility for the employee to be the master of his own work situation, to have some control over his time budget, to increase his knowledge and skills, and to co-operate with other workers. However, it is worth drawing attention to two obstacles which will certainly discourage any " technocratic " application of the LEST method.

One of the advantages of this method is that it takes into account a spectrum of elements in the work situation ranging from the physical environment to psychosociological factors. Unless obliged by legislation or the trade unions to tackle all these elements, however, management often deals only with the problems for which an easy solution exists and ignores the others. One factory manager, for instance, who had carried out a remarkable reorganisation and given one group of workers a large measure of independence leading to an enriched working life, was reluctant to adopt the LEST method because it would show up problems, such as excessive noise, for which he had no solution. This brings us back to the objection to satisfaction surveys: the managements of enterprises claim the prerogative of deciding which hazards and shortcomings should be dealt with, whether to avoid trouble with their employees or to concentrate attention on problems that have already been solved. But how can it be argued that there is no solution to a problem before it has been seriously studied by the employees and the appropriate services of the enter-

prise? In the majority of cases more or less rapid solutions can be found, and the better the real goal is understood by all, the more easily they can be devised and put into practice. Even supposing that no immediate remedy is available, the protests resulting from awareness of the fact are probably less to be feared than an attitude of resignation to bad working conditions.

The second obstacle to technocratic application of the method is the fact that its inclusion of psychosociological factors runs directly counter to any idea of turning the worker into a robot. In practice, improving the psychosociological aspects of a job means restoring the worker's initiative and enabling him to acquire a certain independence in the organisation of his work and to co-operate with others.

The authors of the method disavow any technocratic use which may be made of it for a fundamental reason: in their view, work alienation results essentially from the fact that employees are generally regarded as just one factor of production among others. Efforts to improve workers' welfare do not touch the root of the matter, however, unless they make it possible for workers to regain control over their situation. Naturally it is important that their workload should be reduced and that they should run no risk of being mutilated physically or mentally in doing their jobs, but the means by which these improvements are brought about are also of vital importance. If we grant that man is something more than a bundle of muscles and nerves, that he is also a political animal and a social agent, we must ask ourselves what part he is going to play in the improvement of his working conditions. Who in the enterprise is going to apply the techniques for analysing these conditions, who is going to acquire the necessary knowledge and skills, who is going to gather the data, who is going to study the information and discuss it, and who will take the necessary decisions?

In our opinion, the ideal would be for both workers and management staff to compare their views and experience of the work situation with the interpretation of it given by physiology, psychology and sociology. A certain amount of theoretical knowledge would give the workers a clearer understanding of their conditions, enabling them to analyse their feelings and to discover aspects of their work of which they are as yet unaware, in particular certain long-term risks. As for the technicians, their view of work will also be modified. One of our research workers asked the head of the assembly shop in a car factory to classify his workers according to whether their working posture was normal, awkward or very awkward. A few days later he explained to us how this request had led him to look at each job in a completely new way: he no longer saw his workshop with the same eyes. Action on these lines would mean that the evaluation of working conditions was no longer the simple expression of an opinion at some particular moment, which is what satisfaction surveys try to elicit, but the result of a confrontation between theoretical knowledge and practical experience of the job in question.

Considering the lack of precision of the standards involved, the cursory nature of the analysis this type of method allows, and our ignorance of the interactions between the various harmful effects of working conditions, it

would obviously be unrealistic to expect unanimous support for the approach outlined above. What matters is to provoke discussion, not to muffle it by claiming scientific infallibility. Our ambition is that the investigation of working conditions themselves should make it possible to situate the individual worker in his enterprise as a member of a social group. He will need not only to acquire fresh knowledge which will change his perception of his work but also to maintain contacts with his fellow workers both during the gathering of data and the discussion of the results. It is by getting people to speak up, by the exchange of views between workers, by discussions between workers' representatives and management that working conditions and social relations within the enterprise can be simultaneously improved.

This kind of method can also facilitate action by the State. Official encouragement of private initiatives and the dissemination of information on current experiments are very important in themselves, but it would also be possible to envisage a more general and systematic effort. For example, by applying the direct analysis method, which ensures the comparability of results between enterprises, it would be possible to draw up an inventory of working conditions in each industry. Such a comparison would have a stimulating effect and could pave the way for a study on the feasibility of taking the most favourable conditions as the norm. Some improvements would cost nothing, others would call for investment. In this way it would be easier to define goals for each industry, and research programmes could be drawn up to investigate the most serious or widespread hazards for which as yet no remedy has been found. Particular risks or other unsatisfactory conditions could also be tackled more effectively. For example, if we are to get to grips with the problem of noise, we first need to have data on the distribution of workers by the level of noise to which they are exposed, as well as on its chief sources. On this basis it would be possible to look for short- and medium-term solutions and to lay down targets for achieving them.

There already exist workshops in which all the jobs have been analysed, using the LEST method, by a committee consisting of representatives of management, production workers, support services (e.g. maintenance, methods, design) and trade unions. The scores awarded have been discussed and suggestions for improvement advanced; in cases where financial outlay is called for, the cost is estimated by the design office. This has led to job-by-job, hazard-by-hazard improvement programmes setting out what needs to be done in the short term (less than six months), the medium term (over six months), and the long term (matters which can be dealt with when the workshop is resited or extensive rebuilding takes place).

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Surveys of job satisfaction tend to treat it as an end in itself whereas in fact it should be regarded simply as an indicator of short-term change. Moreover, the level of satisfaction experienced is not what really matters. The unskilled worker who is resigned to doing a boring job may report just as much satisfac-

tion as the skilled artisan who is able to display his creative powers. Yet the mental and emotional balance of the latter is surely preferable to that of the former. What needs to be brought out, therefore, is less the degree of satisfaction or dissatisfaction than the quality of the balance achieved.

If, as we believe to be the case, our method enables us to evaluate what constitutes good and bad working conditions, why not observe the situation directly? Why make this dubious detour via satisfaction surveys, in which there is always some risk of discrepancy between reality and the picture workers give of it, either because they have grown accustomed to certain conditions or because of their particular system of values? If the aim is to improve working conditions, it is clearly preferable to do so on the basis of direct analysis.

The choice of method, in our opinion, will depend on whether the objective is simply to avoid difficulties in labour relations or genuinely to improve the quality of working life and to involve the workers in this process. In the first case preference will go to satisfaction surveys; in the second it will go to direct investigation of the various aspects of working conditions carried out in collaboration with the workers and their representatives. ■