LISL KLEIN is a research worker in industrial sociology.

FABIAN TRACT 349

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I. The Ingredients of Work

There is a widespread misconception in middle-class intellectual circles that all industrial work is dull. One has only to hear The Critics on the B.B.C., on the rare occasions when industrial life or factory work come into their discussions, to sample some of the strange beliefs that are held about them. They would be very surprised to see factory workers pitying social scientists for the dull lives that they must have—yet this is a common experience for sociologists and psychologists working in industry. As one girl in a factory put it to a research worker: “Don’t you get bored, just interviewing people all day?”

The same research worker was one day watching a girl whose job was to put the little bits of cork into the tops of toothpaste tubes. In her turn she asked the girl, “Don’t you get bored, doing that all day?”, and the girl looked up in complete surprise and said, “Oh, no! They come up different every time!” So the first thing is to look at this question without preconceptions, and to be careful in the judgments one makes.

There is a great deal of pleasure to be got out of factory life. This shows, presumably, the great capacity of people to adapt themselves and get something out of any environment. It might be objected that they should not have to, that they are rationalising a situation which would otherwise be intolerable. But then, anyone who finds his work interesting or enjoyable may be doing that. In any job, much of the beauty or ugliness is in the eye of the beholder. For instance, it is usually thought that a lawyer has a varied and interesting job, and he certainly has one of the most highly esteemed jobs in our society. In fact what he does is to process particular cases through a set of known rules and precedents—a routine which, when put like that, doesn’t sound very exciting and which a computer might well be able to do more cheaply.

It all depends how you look at it. In a large organisation even a manager, with a highly responsible administrative and co-ordinating job, and big decisions to make, may still be only part of a bigger pattern. A foreman, in charge of two hundred people in a very large firm, recognised this when he said: “It pays you to be a cog, even if it’s a big cog”. And this is true. Anyone who, if he comes to work on a Monday morning full of a new idea, cannot pursue it, either because it must be referred to Head Office, or because someone else in the organisation might be upset, or because it means creating a difficult precedent is, however senior his position, only a bigger cog. So we may all be kidding ourselves.

In considering the question of the actual content of work I want, first of all, to state the obvious and get it out of the way. It goes without saying that the first thing that matters about work is to have it. Any discussion
about intrinsic work satisfaction has to presuppose that there are no fears of large-scale unemployment, and becomes nonsense if there are such fears. The next thing, still before the intrinsic satisfaction of work matters very much, is to be adequately paid for it. To leave wages out of such a discussion is to beg another very big question. Nevertheless, I want to discuss the question of work as if basic security and basic living standards can be taken for granted. It is hard to know whether this is justified. One moment we seem to be on the brink of disaster and, with shoulders to wheels and noses to grindstones, are exhortation to pant along behind the industrious Germans, Japanese, Russians, Americans and Uncle Tom Cobley; the next we are apparently affluent to the point of demoralisation. So, leaving the economic argument out of account, I am going to give us the benefit of the doubt. After all, unions now include shorter hours and longer holidays in their claims, which suggests that they are beginning to feel secure about the basic necessities and to look beyond them. And even when demands are for money, more cash often represents something other than purchasing power: it may be compensation for boredom, it may be an indication of how well one has got on as compared with others, or a measure of one's bargaining strength. The new needs, which arise when basic needs are satisfied, are complicated and difficult to define. We do not know how to demand satisfaction in work, so we continue to demand money.

There are, then, two possible next steps: one is to do away with work as far as possible, to increase leisure and get satisfaction from leisure activities. But it does not seem likely that the bulk of work can ever be done away with, and this way out is, in a sense, an admission of defeat. If the affluent society now gives us some economic leeway, it would seem at least as important to take a look at the nature of work itself, to see where its satisfactions lie and whether they can be increased.

Certainly, whichever way you look at it, work satisfaction is a very slippery topic. Almost everything that can be said about it can also be contradicted; for instance, mining is by most standards a terrible job—dangerous, dirty, unpleasant, unhealthy. But because it has existed for a long time, because traditions have grown up round it, because there are social compensations for the arduousness and the danger, miners will fight hard for the right to do it. Joint consultation is supposed to stimulate a sense of participation; on the other hand nobody ever seems to get a sense of participation from it, and many people don't want a sense of participation. Again, everybody wants more money, but many are prepared to take less money for a job which gives them a sense of purpose and self-fulfilment.

The reason for these, and similar, contradictions is that satisfaction in work does not lie along merely one dimension. Many factors go to make it up, and I want next to list some of them to show how complex a subject this is. They can be divided, rather arbitrarily, into three groups: those which lie in the nature of the job itself, those which are social, and those which lie in the circumstances surrounding the job. The things which contribute to satisfaction or dissatisfaction at work apply to any job, and this should
be borne in mind when we look at them in more detail, although I shall do so mainly in relation to industrial work.

The Job Itself

The first group consists of those experiences which are intrinsic in the operation itself. First of all, the physical experiences—the strain, or lack of it, degrees of comfort, dirt, noise, colour, ease or difficulty of operation experienced in the course of the job. (Under "strain" one could include the effort involved in getting to work, although this is not part of "the job itself". Your view of a job can be very much coloured by how far from home it is and how easy or difficult to get to.)

In this connection, it is important whether a job has within it the opportunity, or the excuse, to move about occasionally. In a firm where the effects of work study were being investigated, the main change which was made was that people had lots of work brought to them, instead of having to go and fetch them for themselves. Instead of experiencing this as a relief, they resented it very much, because fetching their own work had given them the opportunity to move around occasionally, have a change of scene and an occasional chat. (And, incidentally, some of them had devised ways of picking and choosing jobs, of being ready just when a good job was coming up, and didn't like having this interfered with.) But there are also good physiological reasons for changing position occasionally. The repeated use of certain muscles, even in light work such as typing, contributes to a feeling of monotony, which is very often really a feeling of fatigue. However, the relationship between boredom and fatigue is a complicated one: a typist may feel she is bored when she is really mildly fatigued; but she may also become fatigued more quickly when she is bored.

Then there is the feel of the stuff you're handling; the pleasure of handling nice shiny pieces; the pleasure of handling efficient tools, or the constant frustration of having to use tools which are inadequate or have not been properly maintained. All contribute to your overall feeling about the job.

Another big factor in giving meaning to work is having your own machine or set of tools, and being responsible for them. One may find, say, a press operator developing a very strong attachment to his own particular machine, getting intensely resentful if he is moved somewhere else, or if the nightshift leaves his machine in a mess. People set up relationships with tools and machines, and even with their own geographical position in the shop or office, which can be very important to them. Pin-ups, rows of boxes cordonning off somebody's "own" corner, traditions about where to put the Christmas decorations, all demonstrate and strengthen this relationship.

Variations in batches. There is often a difference in materials or components which the outsider cannot spot but which can have great meaning to the people handling them. When the factory manager yells across the yard for three more boxes of four and a halves this can really mean something to every-
one involved: the people who made them, the people who have handled them in the stores, the people who load them on to the lorry. Four and a halfs are different, and if you haven’t handled them yourself you don’t know. Where a job is repetitive, people may introduce their own variations, and may later defend those variations as being essential and inherent in the job; conversely, if there is too much variety, and too many decisions to make, they may “switch off”. This is where the eye of the beholder is so important that it is impossible to generalise: there may be interest and variety in different pieces of cork, while all arithmetic classes look alike to the disgruntled teacher, and all post-operative cases look alike to the tired nurse.

**Variation in Speed.** Variation in speed can make piecework attractive. On many piecework jobs it is possible to bash away hard for a couple of hours and then take ten minutes off to have a cigarette or a chat, without incurring the wrath of the foreman, because in quite a big way one is one’s own boss. This may even be possible on a conveyor belt. There have been experiments in letting groups of people decide the speed of their own belt, and they have usually varied it at different times of the day.

**Having one’s own particular knacks and ways of doing things;** the extra twist or pressure which is not laid down in the method but which you know makes all the difference; the jig you rigged up yourself; the extra carbon copy which saves you looking through the files. This is important in all kinds of jobs, clerical and administrative jobs particularly lending themselves to people developing their own routines and systems. Sometimes these are highly inefficient in terms of the whole organisation, but people cling to them possessively, and will find good reasons for retaining them because this is what makes a job your job. One of the dangers of work study is that it may determine methods too precisely and take away the opportunity to develop small tricks.

This leads to what is perhaps the most important factor in this group: the satisfaction which the job gives is perhaps most closely related to the opportunity it provides to develop and use skills. Self-expression, development, fulfilment, whatever you want to call it, has much to do with using skills and developing skills; for most people, also, with having their skills and progress appreciated. Both work which is too easy and work which is too difficult are frustrating, so that there are two sides to the equation: what talents (official and unofficial ones) the job enables a person to use or to develop, and whether he has been selected and trained to be able to meet its demands. There is real pleasure to be got from having and beating an attainable target, and real misery in having a target which is always just out of reach.

Both sides of this equation can also go wrong at management level, and indeed in professional and other non-industrial jobs. There are plenty of graduates in industry kicking their heels and feeling that they are not being used, who were recruited for reasons related to prestige and not the needs of the job; at the same time, many managers suffer from strain and pressure, because at middle-management level targets tend to be unlimited.
or undefined. If managers were allowed to have a sense of achievement more often, their subordinates would probably feel the benefit too.

_The coercion there is in a job._ This is, of course, why employment cannot provide all the satisfaction of a hobby—once one has taken on a job one is no longer free not to do it. Within this limit, however, there may be many degrees of freedom and flexibility. There are probably many jobs where flexibility could be greater if one thought about it, where work could be taken home or done at unusual hours. Why must all clerical work be done in Central London between nine and five, for instance?

Coercion may also come from sources outside the job. How you feel about a job or a career depends a lot on whether you chose it yourself or were pushed into it, either through some form of positive pressure, or lack of opportunity to train for something else, or simply through not knowing what else was available. There is a lot we don’t know yet about the range of choice which is actually open to people. It can be surprisingly limited. There was a man whose firm moved from one side of London to the other, so that to get to work he had to go through London every day on his motorcycle. He found this very tiring and began to develop various symptoms of strain. When he went to his doctor about them, the doctor asked whether he could not perhaps change his job—and it simply hadn’t occurred to him! This kind of thing may be quite widespread and needs to be examined. It is not necessarily always good to stay in a job for 50 years and earn a gold watch. We need more effective vocational guidance, and not only for school leavers. Many people don’t realise till they are quite a bit older that something is wrong with their choice of job. The Labour Exchange interview would seem to be the obvious opportunity for more positive guidance.

**Social Contacts**

The second big group of factors affecting work satisfaction consists of social factors:—whether the nature of the job itself brings you into contact with others, or contact only takes place in spite of the job; whether these contacts are only with people at your own level of the organisation, or with those at other levels as well; whether geographically you are alone or in a group; what opportunity there is to gossip. Gossip can be a big source of satisfaction on jobs which are so routine that they require no attention, and for this reason women often enjoy routine jobs. On the other hand, if there is a lot of noise, or people are too far away from each other to talk, the situation is very different. A sewing machine, for instance, or a power press, isolates the operator socially and takes just enough constant vigilance to prevent him or her attending to anything else—but without absorbing the attention.

Day-dreaming should also be mentioned here. Although too much day-dreaming is probably psychologically unhealthy, it does look as if some girls and women like routine jobs if they allow them to day-dream. If work is not the main concern of one’s life anyway, it seems quite satis-
factory to have a job which allows one to plan the meals or think about what to wear for the dance.

Then there is ganging up with your mates against something or somebody. This is a great source of pleasure, and it ranges from huddles in the cloakroom, through the solidarity-creating trade union activities, to extreme militancy at the other end of the scale. The need for an opportunity to oppose is important, and I shall come back to it. Related to this category are also such assertions of independence as fiddling the management, beating down the time study man, sitting in the canteen for a while after the bell has gone. All of them assert one's independence vis-à-vis "them," and all of them may give a special satisfaction when done in company. They are things which people put into the work situation themselves, bits of freedom and pleasure which people find for themselves which are not designed into the job.

There are many other relationships which may combine to give a job its unique flavour, either in the direction of pleasure or of misery: how you get on with your supervisor; the ritual slap-and-tickle with the girl on the tea trolley; the long-standing vendetta with a particular inspector; the exchange of insults with the canteen staff; the weekly transactions with the chap who runs the football pool or lottery, or with the woman who has a supply of cheap cigarettes or nylon parachutes; and many others.

The Circumstances of the Job

Into the third group I have put a number of factors which lie in the circumstances surrounding the job, some of them in the policies of the employer. There is the social esteem of the product: one may be proud of driving rivets into the Queen Mary and indifferent about doing it for domestic hot water tanks; one may feel ashamed to work an adding machine in a tax office and boast about doing it for a film or television company. To complicate matters, the social evaluation of occupations changes. Most girls 50 years ago would have been proud to be allowed to work as bank clerks and ashamed to model clothes; now this merely sounds quaint.

Then there is the prestige attached to your particular position within some hierarchy: since the whole of our culture is competitive, people may derive pleasure or misery from quite small differences between their own position and someone else's. The attainment of a carpet in the office, or the right to a particular parking space, or the key to Top People's lavatories may be greatly valued. Wages and salaries are also important here. Above certain levels, money is often valued mainly as an indicator of status.

Whether you accept the aims of the organisation you work for; knowing where your job fits into the whole; knowing what goes on in the firm; feeling that you are making something valuable; feeling that what you do matters. In a dirty old factory in Blackfriars during the war a job came in one day which consisted of painting a large quantity of metal "Ds"—the letter D stamped out in metal. These were put on to trays, sprayed with paint, and dried, and two women had the job of turning them over so that
they could be painted on the other side. Hour after hour, and day after
day they turned these things over and were at screaming point with bore-
dom, when by chance the foreman, who was walking through the shop,
said that these “Ds” were for labelling drinking water for the troops fighting
on the second front in Normandy. Obviously, this changed the whole
meaning of the job; they were doing something of national importance and
began to enjoy it.

Whether you can feel that what you do is effective: cleaning something,
for example, can be quite a satisfying experience in itself. What makes
washing dirty dishes a drudgery is the knowledge that the effect will only
last a few hours, and the job will have to be done over and over again,
three times a day for ever. There is a world of difference between spring
cleaning, say, in the country and spring cleaning in a dirty back street in
Kings Cross, where the best that you can hope for is that the effect will
last for a week.

A knowledge of results. This can come in various ways—it can be ob-
vious from the job itself, it can be due to an understanding boss keeping you
informed about your own progress, as well as the progress of the firm and
its products, it can take the form of various ways of target-setting against
which you can measure your own achievements.

The more progressive managements are aware of the type of factor
included in this group and some, though not enough, go a long way in
their attempts to meet it. The bigger the organisation, the more difficult
this may be. For this reason some of the prestige advertising of the larger
companies is aimed at arousing pride in their employees quite as much as at
their customers. On the same lines joint consultation, various training
schemes, and particularly induction training where new recruits may be
shown the whole factory, the whole product and the uses to which it is
put, are all aimed at increasing peoples’ knowledge of, and therefore par-
ticipation and satisfaction in, what is going on. The position here is a bit
tricky. On the one hand it is still necessary to press for more of this kind
of activity, because many managements are still not even aware of the
need; on the other hand a high level of this sort of activity tends to lull
managements (and unions?) into a false sense of finality, of “now the
workers ought to be happy”. It covers, after all, only one aspect of life
at work, and a rather debatable one at that. I shall come back to this later.

These are some of the factors which go to make work satisfying or
unsatisfying. There are probably many others which have been left out,
and their various combinations and permutations are innumerable. Add to
this the fact that in different situations they have different orders of priority,
and it becomes clear that the problem is not a simple one. It is just not
possible to generalise; one has to look at a lot of jobs in very great detail.
There is no way round this.
2. Combining the Ingredients

PROBABLY the most useful way of looking at jobs is under different technical conditions, to see how these may influence the possible frustrations and satisfactions that have been listed.

If one looks first of all at a craft job, say that of a tailor making suits one at a time, there is very little mechanisation, and there is very little subdivision of work. This job has built into it a lot of the satisfactions listed. The tailor is using skill, he is using a knowledge of materials and techniques and he is also developing skill, it is a job on which he can improve. He can easily assess results or the customer makes him very quickly aware of results, and he can use this information to improve his performance next time. He knows obviously what it is for, and where the different parts fit in. He has to know this as part of the job. He has a variety of tasks. Within an overall time limit he plans the work himself and co-ordinates the different parts of it. He has a choice of methods and he can develop his own special knacks. In other words, many of the important satisfactions that were listed are built into the demands of the job and do not have to be inserted by deliberate policy.

Mechanisation

As mechanisation develops, and bigger quantities are produced, work gets broken down into component parts. In the production of very large batches one man is likely to see only one component of a product, and to perform only one operation on that component, and that one operation repeatedly. This could be called a horizontal sub-division of work, but at the same time there has also been a vertical sub-division. He is not performing the whole work content of his one operation: someone else has planned it, has specified the material to be used, the tools, the methods, sometimes quite precisely the movements he has to make, and the time he has to take; someone else has prepared the work for him, and someone else inspects it. In other words, all the control, planning and decision-making functions have been removed from the job itself and transferred either to the machine or to higher management. He does not need to know where things fit in, though a progressive management may tell him; he does not need to develop skills which he thinks up himself, in fact he will be a more satisfactory worker if he doesn’t.

In the production of smallish batches, there is often still a good deal of scope for people to compensate for this, to take back for themselves little bits of freedom, to acquire little bits of skill, though it may not be the kind of skill management wants them to have. The average engineering workshop is a marvellous arena for all kinds of small fiddles and manipulations, which are all signs, it would seem, of people asserting themselves against the system, introducing satisfactions for themselves, many of them of the social kind.
Mass Production

It is in the real mass-production situation that the least opportunity for anything of this sort lies. When work is highly machine-paced, or on a conveyor belt, so that the operator has no control over the flow of work or over anything else, the situation arises which Charlie Chaplin depicted in "Modern Times"—a robot forever tightening a screw on a moving belt—with a minimum of decisions to make, or skill to use, in the course of the work.

Many people think of this as the typical industrial job. It is not; in this country there are not as many of these jobs as one thinks. For one thing, the ratio of clerical, administrative and technical workers to manual workers has been changing. Between 1900 and 1956 it changed from 1:12 to 1:4 in manufacturing industry alone. For another, only a fairly small proportion of manufacturing firms are actually engaged on mass production. Thirdly, even in a mass production firm, not everyone is on the assembly line.

But what is life like for those who do have this kind of job? In a study of assembly-line production of motor cars, the American sociologists, Walker and Guest¹ found that people were very concerned to try to find small ways of varying conditions, and that most of the men disliked intensely the pace, the repetitiveness and the lack of opportunity to develop skills. The effect of this situation seemed to extend beyond their working lives, since the men's wives made comments to the effect that their husbands seemed to lose interest in out-of-work activities such as sport, or local affairs, or the church, since they began their current jobs.

I mentioned at the beginning that people are very adaptable. Now, in this situation, if a man's ability to grow as a person, make decisions and take responsibility shrink to fit the opportunities which are normally available to him, so that he becomes what we call apathetic, who is to say that this is not a healthy adaptation to his environment? Or if, unable to adapt in this way, he becomes militant instead, this too need not be unhealthy for him and should not surprise. The only thing which would be surprising is if the technical environment in which a man spends his days did not have some influence on him.

Automation

So far we have looked at what happens to work under increasing mechanisation of production. When mechanisation develops still further, there comes the situation of process industry and automation.

It gives a false picture to lump all automatic processes together, first because there are different kinds, and secondly because automation is a matter of degree, and there are many stages before that of the fully automatic factory. The skills required from workers on these processes therefore

vary greatly. In general an automatic process may be organised so that the operator monitors the process, having a “push-button” type of job, where only one course of action is open to him and he behaves in many ways like the mass-production operator; or it may be set up so that the operator controls the process, in which case new and important skills may be required from him.

In some cases of automation, therefore, fundamental changes have taken place in work content for those people who are still employed on the process (I have ignored here the problems of those who are no longer employed.)

In mass production the operator is quite correctly called a machine hand. On an ordinary machine tool he puts in the piece, starts the machine, the machine cuts, he stops the machine, takes the piece out. On an automatic machine tool the machine itself does all that, the machine hand is eliminated and what is required is a very highly skilled setter to set the machine and control it. Similarly, in process work—chemicals, oil, etc.—what is required from the worker is to control the process—to watch for changes, spot faults, weigh up their importance and decide on action.

What has happened to the role of the operator? In a craft job we saw him doing the whole job: planning it, carrying it out, checking it, and modifying what he did next time according to the results he achieved. In a mass-production job, he only performs the operating part of this cycle—all the planning, deciding, inspecting and adapting is done by other people or by machine. Now, with a high degree of automation, the operating part is done mechanically too, and the operator may once more be doing a whole job—but the job, this time, is to control a complicated piece of apparatus.

In many ways his role now resembles that of a craftsman again. For instance, he has to have information—it is not a matter of being nice to him and telling him what the process is about, he has to know. Because the equipment used is so expensive, and the rate of output so high, the cost of even short breakdowns on automatic plant is extremely high. It is therefore very important that the people working the plant should be able to recognise faults or impending faults and know what to do about them. This is not always realised. In several cases of breakdown which were investigated as part of a study of training needs for automation, managers acknowledged that a higher degree of training of their operators could have saved very large sums. In one case “the manager concerned estimated that the financial loss involved amounted to £150,000 over the year [from quality variations]. He was convinced that more highly trained operators could reduce this figure by possibly as much as £50,000. This would result

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from sounder on-the-spot decisions based on a more skilful analysis of the factors involved. The operator therefore needs to have skills. They are usually different skills—instead of dexterity and manipulative skill he now has to develop more intellectual abilities, to perceive, think, and make decisions.

In addition, other things seem to happen to his job: he has very often become the key point in a communication system. He has direct access to people at a very senior level because the information which he has is very important. He has direct access to maintenance people because he is in charge of very expensive equipment. For economic reasons the machinery in a highly mechanised factory usually runs throughout the 24-hour period so that there are shifts of operators on continuous duty. The foremen and maintenance men, however, are often only on duty during a normal working day so that the operator, in addition to his routine, forms the chief link of communication between the machine and the foreman and maintenance staff. This leads to a free exchange of views, and as a result a group or team often develops spontaneously and grade barriers tend to break down, with the so-called unskilled operator being regarded as a responsible person and, apparently, beginning to take up attitudes which elsewhere are characteristic of management rather than of labour.

The requirements of the task are so obvious to everyone that unusual attitudes do seem to develop. For example, in a chemical process plant investigated in one particular study, it was found that the evening shift came on regularly half an hour early so as to enable the day-shift to go off in time to have a drink before closing time on their way home. It didn’t occur to anyone to leave the plant unattended. Relationships also seem to improve when they are dictated by the obvious needs of the situation, which everyone understands.

One more point can be made about automation: it is that at this level of mechanisation we are still at the development stage. It is in some cases still possible to choose between alternative ways of designing and setting up the process, before vast sums are irrevocably invested in equipment.

To sum up, in a rather over-simplified way: as mechanisation advances it first tends to separate out all the processes which a man has been performing, does them by machine, and puts in men as adjuncts to the machine. At a later stage it tends to put them together again in a more complex machine and may put in men as controllers of the machine. The demands on the people are different at each stage and the response is different at each stage.

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3. Attempted Solutions

It is one thing to say that the way people spend the greatest part of their waking lives ought, in itself, to be a source of satisfaction and to have some meaning beyond earning a living; it is quite another to translate this into specifications for particular jobs. For one thing, as we have seen, there are very many factors involved. For another, it is one of the slippery things about the subject that people get adjusted to and get some kind of satisfaction from almost anything.

Suppose we decide that there are jobs which it is socially undesirable for people to do? Then we have two problems: one is that people may, in fact, not mind doing them. Imposing one's value judgments on others is always a dicey business. But if the people doing those jobs do dislike them, and find no way of getting satisfaction out of them, then the second problem is that it may be economically intolerable to abolish them. In that case, we simply have to accept the social consequences, as well as pay high earnings to induce people to do them. It is no good complaining about apathy and militance, if those are the only ways of dealing with an impossible working situation. This may have something to do with the fact that much of our industrial trouble is in the motor industry, and that on an assembly line the tea-break assumes great importance.

Careful selection may help to some extent. We do need jobs for the less able and less mature. But this raises the problem of meritocracy. If people are so carefully selected that only the dullest do the dull jobs and the weakest are at the bottom of the ladder, we may stop producing troublemakers, and this could be a dangerous state of affairs. Troublemakers have been responsible for many improvements, both in working conditions and in the efficient running of firms. Whatever their motivation, and although troublemaking can obviously get out of hand and be purely destructive, there is something to be said for having someone around who keeps management on its toes and anxious to forestall the next spot of bother!

We are certainly not at the stage where a politician can say "Work must be designed this way and not that way for maximum satisfaction". There are too many factors involved. It is not inconceivable that one day we may perhaps be able to do it—one can just barely imagine that there might be a Factory Act which perhaps gave point ratings for jobs in terms of the value to the person doing them, just as now we have safety specifications, and which then says that no one may be employed in jobs which rate, say, less than 10 points, and that all such jobs must be abolished even if this is not economic. You could then, presumably, go further and say that the jobs which people are given must be within, say, 10 points of their own capabilities. But in the present state of knowledge this sounds ridiculous even as one says it, and doing this kind of thing by legislation would almost certainly defeat its own end.

As in other scientific fields it is difficult to see the role of the poli-
tician in this, since it must be tackled on a technical level. On the other hand, there is enough knowledge by now for social scientists to be able to give advice in particular work situations, and we do know by now the directions in which research can most fruitfully be pushed.

**Ergonomics**

One way in which the problem is being tackled is in the field of ergonomics. This is called "human engineering" in the United States, a label which is disliked over here, although it does give a better description. It is concerned with the idea of "fitting the job to the worker". It has in recent years taken the attention of psychologists, anatomists, engineers and physiologists, who are concerned to study human characteristics and capacities in order to relate them to the demands which are made on people by particular tasks. It results in the redesigning of work—machines, workplaces, sources of information such as instrument panels—to fit in with what is becoming known about the physical and psychological capabilities of people. On the basis of such knowledge equipment may be designed so as to be comfortable and least difficult to use, both at the extremes of human capacity where you have to do this or people will simply not be able to work the equipment, and at points before the extremes, to increase comfort, convenience and efficiency.

As seems to happen in many fields, this line of research first arose out of military needs. During the war technical advances produced machines such as high-speed aircraft and radar devices, which presented their operators with tasks that could be so complex or exacting, or require such rapid action, that they were pretty well impossible to perform. It therefore became necessary to understand the human limitations of the operators and to take them into account. Anatomists, physiologists, and experimental psychologists were called upon to work on this. Industrial psychology is therefore yet another field of scientific research in which some of the best work has arisen out of military needs—a subject on which the Minister for Science himself has expressed strong views. There are probably more psychologists to the square inch in the Defence Departments than in any other institution where work is done, and it is almost by accident, by some of these people trickling out into civilian life, that industrial applications of the knowledge began to be worked on.

The study of ergonomics is the right approach to the question of work, because it attempts to deal with work at the place where it happens. The main thing, after all, is how you spend your working day; the importance of some of the satisfactions listed earlier in the second and third groups, of some of the extraneous relationships and committee meetings, merely lies in the fact that they interrupt it. If one is not prepared to tackle this on a technical level, there is not much one can do about it. If, therefore, I make some critical comments it is only because this is so clearly the right

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A. T. Welford—Fitting the Job to the Worker. in "Time and Motion Study". March 1960.
way to approach the subject that it should be extended and broadened.

Two comments can be made on current work in ergonomics, and they are probably related to the military origins of the work. One is that the range of topics with which it deals has been narrow. Understandably, the scientists concerned want to confine themselves to fields where their work will be scientifically valid: to human characteristics which can be measured and to ideas which can be tested by experiment. But even within the narrow range of characteristics that this leaves available for investigation, the measurements are not absolutely precise and the experiments not absolutely foolproof. Once one accepts that imprecision is a matter of degree, one might as well be relatively imprecise about more important topics as about less important ones, so that it should be possible to investigate the emotional content of work as well as the perceptual and physiological content.

It is important to know how the worker can cope with high or low temperatures, noise, various kinds of physical discomfort, complicated signals, when the demands which these things make on him are extreme. When they are not extreme, it matters less to make a lever just a little easier to handle, or the figures on a dial just a shade easier to read. Indeed, one can go too far in making things comfortable and convenient, if by doing so one eliminates choice and the worker's opportunity to manoeuvre and feel a bit independent. There is something to be said for the feeling expressed by one man in an interview: "But I'd rather wash my hands in a dirty bucket!"

**Job Enlargement**

Emotional needs and abilities in work are more difficult to treat scientifically than perceptual and physiological ones, and strictly speaking one is partly guessing about them. But they do exist, and the fact that they are not easy to pinpoint is no reason to act as if they don't. When it was first coined, the phrase "fitting the job to the worker" was given a wider meaning than it has now that detailed work is actually going on. This need not be a serious problem. For one thing, the ergonomics approach will inevitably overlap with the wider aspects of making work satisfactory: if you enquire into fatigue, you are bound eventually to enquire into boredom, and so on. Also, ergonomics teams could easily include people from other disciplines, and research can be done even on the basis of partial guesswork. So can experiments in re-designing work: in a small way by varying tasks, "job rotation" transferring workers, grouping them differently and so on, but in a much more basic way also. There have been some attempts in America at what is called "job enlargement", which are very encouraging, and which should be followed up in this country.

One such attempt was made by I.B.M. They began in their machine shop, which was organised on traditional lines. There were machine setters, operators whose job was to put pieces in the machine, start the machine,

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stop the machine and take the pieces out, inspectors who inspected the work and specialist departments for sharpening and maintaining tools. In a fairly lengthy re-training programme, the operators were trained to set their own machines, sharpen their own tools and inspect their own work so that the job cycle was greatly increased and made to include a variety of skills. It is not as simple as it sounds. For instance, it could only be done on a rising market because it left the firm with a lot of specialists to find work for. But it does open up big and interesting possibilities and far more experimenting of this kind could be done.

The Efficiency Motive

A second comment one can make about ergonomics is true of all social science research in industry. It concerns a kind of conspiracy which has surrounded the initiation of new projects or lines or research. One gets the impression that ergonomics is only concerned with the efficiency of the systems being studied, its task being to eliminate difficulties in the way of the operator, not out of consideration for the operator, but out of consideration for the process. Ergonomics specialists explain carefully that they are not concerned with anything less positive than efficiency or, at best, a worker’s physical breakdown. It was made clear at a conference on the subject that “the main point in ergonomics is to emphasise that anything used by man must be designed in relationship to man, otherwise the chances are that it will not be so efficient or useful, and that the man using the instrument will become more fatigued, and will be less skillful, quite apart from the fact that he may also become an invalid more easily”.

This is not as bad as it sounds. Lip-service has always to be paid to the cause of higher productivity, because industry likes to think of itself as hard-headed. Research expenditure, therefore, has always to be justified in terms of economic returns, even when everybody involved knows that there may not be any. Ergonomics apart, broader sociological research in industry has always been initiated in the name of efficiency, on the grounds that “the happy worker works better”. When this turns out to be nonsense, as of course it is—a worker may be happiest when idling the day away in gossip and may produce most output when he is under pressure, unable to talk to his friends and afraid of the sack—the research does not therefore stop, since the initial excuse was all that was needed. In other fields it is now quite respectable simply to wish to extend sociological knowledge or to wish to solve a purely social problem. Not so in industry.

Although, in a sense, this does not matter much, it would be useful to have a more realistic approach. Firms as well as governments ought to make real decisions about how much money they are prepared to risk on activities which they consider to be important for other than economic reasons. We could then stop wasting research effort on trying to show that there is a simple relationship between satisfaction, morale and efficiency. There may be no relationship at all, and if there is, it is not a simple one.

4. The ‘Human Relations’ Solution

ERGONOMICS shows, then, a more fruitful approach than romantically wishing that industrialisation had never happened. It also provides a healthy counter-weight to the woolly minded “human relations” approach. The philosophy of the human relations school has been: “Be nice to people. Then they will be happy. Then they will work hard.” Muddled thinking about this has had two bad effects. Firstly there are, in any case, plenty of managers, at all levels, who want to be nice to people, simply because they feel that people have a right to be treated reasonably. Such managers have been led to believe that this should also lead to harder work, and when they find that it does not necessarily do so, they feel disillusioned and cheated and find it difficult to go on being nice.

Secondly, because “being nice to people” and “human relations” training has generally been concerned only with relationships at work, and not with work itself, the idea has become generally accepted that the workshop is the place for production, and the personnel department is the place for human relations, the place where values reside if there are any in the organisation. (Sometimes, the mere existence of a personnel department is thought to denote the existence of “values”). This has tended to mean that people who care about human beings have gone into personnel departments and have taken on themselves a specialisation in human relations. It would be much more useful if people who care about these things took jobs where they can really influence them—for instance, if more socialists went into industry as managers and engineers, where they are concerned in a much more direct way with creating the working conditions of others. The real essential is combining knowledge of, and sympathy for, human needs with technical knowledge.

There are really two problems involved in “human relations”. One is that “being nice to people” is not necessarily enough to make them “happy”, it is only one part of what happens to people at work. I said earlier that some of the components of job satisfaction, like knowing results, knowing about the product and the firm, are catered for by progressive managements with such policies as joint consultation, induction training, explaining balance sheets, etc. Obviously, these things are important, and they are not yet so widely accepted or so long established that they can be taken for granted. (A manager, reminiscing during an interview about the immediate post-war period, said “Then we had another industrial revolution, and we found we’d got to treat these blokes as individuals”). Nevertheless, in recent years some of us have come to rely too much on such policies as a factor in job satisfaction.

In an American study called “Motivation to Work”8 the authors made a study of the job motivation of 200 American middle-management men.

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When they reported feeling happy with their jobs, their explanations were usually in their actual tasks. When they reported feeling unhappy, the explanation was usually in extraneous factors such as supervision, interpersonal relations, physical working conditions, salary, company policies and administrative practices, benefits and job security. This adds to one’s suspicion that the value of these things is rather negative. They matter when they are absent, but they do not by themselves create job satisfaction. The authors of this study refer to them as “hygiene” and this is very good analogy. Hygiene is an important prerequisite for health, but it does not by itself create health. Also, in matters of hygiene, you have to persist, you have to keep renewing your efforts. Just washing once, or consulting people once is not enough; and indeed one sometimes wonders whether hygiene is not perhaps over-emphasised in our culture, and here too the analogy holds.

The second problem arises from the confusion there has been about the aims of these activities. Their function has been twofold: on the one hand they can and do increase an understanding of what is going on, and feelings of satisfaction about the job. On the other hand, they are, in effect, an attempt to manipulate, though not necessarily a cynical one, and sometimes not even a deliberate one. It is thought that through understanding the firm, its economic position and its products, workers will also come to understand that there are not really two sides in industry, that everyone is really working for the same goal.

But how true is this in fact? Isn’t it merely a question of perspective? In the long term it may be true that, if the company goes bankrupt, both the manager and the worker are out of work. But on the whole this is a very long-term and theoretical point of view, and the manager, in any case, has greater safeguards. In the shorter term, there are not only two sides but there are many sides in industry, and their short-term interests are often opposed. For one thing there are functional clashes: the operator is up against the inspector, the production foreman is up against the sales manager, the research engineer is up against the production manager. And then there are economic clashes: when it comes to dividing the cake there are still different interests to be represented (again, not only two, but many). Further, efficiency is a management goal, only in a remote sense is it a worker goal. It is much more real in the short term that the boss wants you to work hard and you don’t feel like working hard; that he wants you to get to work at five to eight and you want to get there at ten past. This is a very real divergence of interests.

Policies such as induction training, good communications and joint consultation could be regarded as devices for fixing the workers’ attention on the wider objectives, and by nature people don’t do this for very long. In the case of the metal “Ds” quoted earlier the wider objective was the obvious national interest and the device was very effective; but I don’t think it would have lasted. If the women had gone on for months doing the same job of turning over metal “Ds”, the effect would have worn off and something else would have had to be injected into the situation.
In Communist countries, it seems, the national interest also plays a large part in harnessing people’s motivation. Pictures of national leaders hanging up in every workshop and office, slogans, exhortations about your part in the five-year plan and so on, all have this aim. One cannot tell how far it works. I would guess that with a rising standard of living it would become less effective and certainly the British worker, with a fairly high standard of living, doesn’t seem very amenable to this kind of thing. Whether this shows a sturdy independence and refusal to be manipulated, or an unhealthy apathy and dissociation, is a matter for argument.

**Joint Consultation**

Whatever the cause, many people give the impression that they do not want to be consulted. They prefer to remain in opposition, or at least detached. As many a personnel manager will testify, it is sometimes extremely difficult to get people to stand for the representative positions on joint consultation committees, and sometimes one finds that those who do stand for these positions are the neurotics, the misfits, or the village idiot who has been put up by his mates for a lark. So we say that joint consultation hasn’t been done properly, that the motives were wrong.

Partly, it is true, a readiness to take full and responsible part in joint consultation is hampered by the limits which are put to the topics that can be discussed by joint consultative committees, and the decisions that can be taken. Much has been written about this. If you are not allowed to discuss anything except the welfare services, then no one should be surprised if flurries continually blow up about the colour of the tea.

But this is not the whole answer. There have been some genuine and far-reaching attempts at consultation, and the point I am trying to make is that even in such firms the work-force may remain basically “in opposition” on many issues, and may have real grounds for doing so.

In considering joint consultation, the history of a country’s industrial relations always has to be taken into account. Hugh Clegg, in his evaluation of the experience which different countries now have of industrial democracy, shows that on the whole, in the context of traditional Western political democracies, it has taken the form of collective bargaining to protect rights and interests, i.e. pressure group democracy, rather than joint decision making. Indeed, it is through collective bargaining that the industrial worker in these countries has traditionally expected to participate.

**Conflicts of Interest**

Somewhere along the line between the immediate experience of the job and a global view of the firm, the national interest and world interest, everyone ceases to “show understanding” when this goes against his own interest. The narrower the job, the nearer home this limit is likely to be put.

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What the worker experiences from his immediate environment to be his own interest is not the same as management's. To be semantic about it, this is so even by definition. Lord Halsbury defines management as an act which occurs in opposition to some form of resistance, and says that therefore "to treat it as a mere problem in communications is quite inadequate".\(^\text{10}\)

By this he means that if the production process or the transport service just happened spontaneously there would be no need to manage. The need for opposition is built into the very technology itself, for basically we have organised work so that there are two camps—those who take decisions and those who have decisions taken for them. A wider view therefore has to be plugged at people continually, by what I have called artificial devices. It does not arise immediately from their daily experience at work, and the bigger the organisation in which they are, the less likely is it to do so.

There is a tendency lately to say that joint consultation has failed, but this is because expectations about it have been muddled. It certainly does not lead to a permanent state of exaltation among workers, which some idealists may have expected. Indeed, there is a sense in which it can never be completely successful. There is much that can be achieved by honest and far-reaching consultation and other techniques for improving "human relations" and "communications". But it is foolish to expect such techniques to eliminate conflicts of interest.

This is what makes management so difficult for anyone with socialist leanings. I said earlier that it was important for socialists to go in for management or for technical jobs in industry. I believe that this is probably the main reason why they don't. It is extremely difficult to accept the opposition and perhaps even the hatred of subordinates, if one is the kind of person who temperamentally or by conviction tends to identify himself with the under-dog or with the working class. Someone who is born or educated to the conviction that he is a leader or ruler does not have this problem and he is usually more successful, and, ironically, more popular as a manager because he does not step outside the role which the workers assign to him. Within this role he can be kind, benevolent and have all kinds of good qualities which will be appreciated. The manager who is really despised is the one who tries too hard to be one of the boys, who goes out and gets drunk with them, and so on. This can be a pathetic spectacle.

One of the main functions of joint consultation in this country has, I believe, been to make it easier for managers to live with this situation. In companies where the intention has been genuine, I am sure that consultation has done at least as much to make a difficult situation more bearable for the management side, as to make the workers' side feel that they have a share in running things.

Nevertheless, although we have probably over-estimated the results to be achieved by joint consultation, it should not be under-estimated.

\(^{10}\) Lord Halsbury—Management, Group Conflict and the Sciences, in "The Impact of Science on Society" Vol. 8, 1957. No. 3.
either. The awful paradox is that you have to keep trying. The really good manager is the one who behaves as if it can work but who accepts, in his heart of hearts and for his own peace of mind, that it cannot do so completely.

**Deliberate “Inefficiency”**

Finally, a little kite-flying: one day some enterprising employer is going to do away with his sports ground, his welfare facilities, his flower-beds and his fringe benefits, and use the money in deliberately ignoring some of the accepted precepts of efficiency—perhaps running his assembly line at a lower speed or allowing the girls in the typing pool to chat. The results might be surprising. In National Productivity Year it is difficult to advocate deliberate inefficiency, but there is plenty of inefficiency now, only it is accidental and haphazard. In terms of work satisfaction, inefficiency may have good results and bad ones—hold-ups, delays, breakdowns, bad organisation can be maddening to work under.

**We need, in any case, to examine this overriding aim of efficiency.** Efficiency means using those methods which are most likely to achieve one’s goal or goals. Therefore one cannot begin to be efficient until one has decided what the goals are and assigned priorities to them. Industrial organisations generally have a number of goals, and some of them are incompatible. In that case, the behaviour of the firm, if not its explicit policy, will show what the priorities are. One may be having a comfortable time in the home market but be willing to risk venturing into the export market for patriotic reasons; one may make a less economic high-quality product for prestige reasons. Even purely economic goals are not simple, since short-term profitability often conflicts with long-term profitability. All the time different goals have to be evaluated and assigned their measure of priority, and being a good employer is often one of them. Sometimes this is because there is competition for labour, sometimes it is simply because this is now part of the climate of opinion. There are firms which are quite explicit in the way in which they integrate social goals, for instance guaranteed employment, with their economic goals, sometimes to the detriment of the latter.

Mostly, however, the social objectives are not made explicit. The Harvard Business Review once made an interesting analysis of the surprising way in which large firms in fact do not maximise profits but pursue other goals.11 Even allowing for the fact that only an economically efficient firm can afford to do this at all, and that there will be some element of hoping for a long-term pay off in terms of worker loyalty, there is no doubt that there exists a genuine paternalistic wish, however motivated, to do something which will benefit employees, to do the “right thing”.

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Deliberate inefficiency would mean deliberately abandoning a technique of management practice or of production engineering, because one does not like its effects. It is a new and strange idea in technology, and one which could not have been feasible until technology was so far advanced that there were alternative ways of achieving the same effects. But in the field of warfare we are beginning to get used to the idea of refraining from using the most efficient techniques for social reasons, so why not in the field of production engineering?

Technically there is probably very little which could not be done in the way of reorganising work so as to abolish those aspects of work which it might be demonstrated are harmful to the people doing them, though this would require more research and clearer knowledge. The question is whether anyone is prepared to afford it—either to slow down the rate of production so as to introduce more freedom and flexibility, or to invest in automatic machinery where the market may not warrant the investment. (This blithely assumes, of course, that the optimum economic decisions on these things are always made now—which is by no means the case.) It is argued that people doing dull work also want the high standard of living that dull work produces. Of course they do—but is it essential for the standard of living to rise at the fastest technically possible rates? Ask the question at a time of slump, and people will throw tomatoes. Ask it during a time of boom, and many will agree that it is worth asking. Therefore, it is difficult to ask until the economy shows more signs of being under control.

Nevertheless, the fact remains: the working environment is a large part of most people’s lives. People have great powers of adaptation, and most of them can make some sort of adaptation to most kinds of work situation. What sort of adaptation they make will depend partly on their personality structure and partly on the work situation. We now know quite a lot about responses to the work situation; what we have not fully recognised is the amount of choice we have in the sort of work situations we create for each other.
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