Sickness conducted in England and Wales from 1944 to 1951. For the purposes of this survey, incapacity was defined as inability on account of sickness to go out to work or, for persons not at work, inability to go out of doors. It is important to note this dual definition of incapacity, because it is a little difficult to interpret the figures for elderly men, many of whom do not go to work and to whom the second half of the incapacity definition applies. Since a retired man may be well enough to go out of doors but might not, had he been still working, been well enough to go to work, the incapacity rates revealed by the survey are not quite comparable from age to age. None the less they are worth looking at and thinking about.

In an average month of 1950 the percentage distributions of men aged 16-64 and men aged 65 and over according to their reported days of incapacity compared as shown in Table II.

TABLE II		Ages 16-64		Ages 65+	
Days of Incapacity					
0	..	..	91.3	..	89.1
1-3	..	..	2.7	..	1.7
4-10	..	..	2.8	..	3.4
11 and over	..	..	3.2	..	5.8

It is surprising how little difference there is between the two groups; almost 9% of men of working ages had some incapacity in the month, and for elderly men the proportion increased only to 11%. It was mainly in the group with incapacity of more than 10 days that the elderly men were in excess, their proportion (5.8%) being nearly double that for younger men. This predisposition of the elderly group towards more prolonged incapacity resulted in their having a quite definitely higher average incapacity rate than younger men—namely, 1.6 days per man per month, compared with 0.9 day for men aged 16-64. However, it must not be supposed that suddenly at age 65 the incapacity rate jumps from the lower to the higher level. The increase is gradual and continuous from about 35 years of age upwards, and indeed the figures suggest an actual falling off after 65.

TABLE III

Age:	16-	25-	35-	45-	55-	65-	75+
Days of incapacity per man per month	0.69	0.69	0.79	1.02	1.61	1.57	1.58

By reason of the special definition of incapacity already referred to, applying to people who do not go to work, the flattening off of the rising trend of incapacity rates after age 65 is probably fallacious, and no doubt the curve in fact keeps rising. I do not want to enter into a detailed discussion of these incapacity figures, and I shall merely emphasize the two points which they bring out—namely, that the proportion of elderly men who do *not* have any incapacity is almost as great as for younger men, and also that there is no evidence of a sudden increase in incapacity amongst the higher age groups, but a gradual increase throughout adult life.

These figures support in a general way the thesis which is being increasingly put forward nowadays, that there is no justification for an arbitrary and rigid retirement policy applied to everyone at, say, age 60 or 65 years, or indeed at any age, on the grounds that beyond that age service will be so punctuated by incapacity as to make it unprofitable for it to continue. Though this is no doubt true for certain occupations that impose a heavy physical or mental burden upon the elderly and impair their health, it is not the case for the majority of occupations, and, provided an elderly man can be relieved of some of the load he has previously carried, there seems every reason for him to keep on working until his own individual state of health renders it expedient that he should stop. The important thing, however, is that he be relieved of his load, and in some cases this may be achieved only by change of occupation. There is indeed much to be said for every man taking stock of his

position when he is approaching the sixties and considering how long he will be physically and mentally able to carry on with his present job, and whether he wants to carry on any longer.

The man who carries on with his customary work after 60 may find himself unable to cope with it a few years later, and he may also find that he has lost the ability and inclination to turn to anything new; but the man who breaks away at 60 and takes on a lighter job, particularly if it is one in which he can find some personal interest, may find that he has embarked upon a second career in which he can continue to give useful and satisfying service for a further 10 years or more. Though we may all have some kind of humanitarian urge to relieve elderly people of the burden of having to keep on working for their living and to allow them the rest that they deserve, it has to be realized that to remove compulsorily from work an elderly man who is fit and eager to carry on doing something is not an act of kindness to that man. The suicide rate is high amongst elderly people. It might not be so high if more of them were given the opportunity of continuing to be useful, productive members of the community.

EXTENDING THE EMPLOYMENT OF OLDER PEOPLE*

BY

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It is perhaps presumptuous for a psychologist, especially an academic psychologist, to speak about the employment of older people, since industry and industrial medicine have had to deal with this problem in a practical way for many years, and have managed to solve it with very fair success in a number of cases. I hasten to say, therefore, that I speak with a very real sense of humility and that my remarks should be taken as suggestions for consideration rather than as confident assertions.

It is well known that the average age of the population has been increasing during recent years. From 1851 to 1921 the proportion of people over 65 was nearly stable at about 10% of those between 20 and 64, but in the 1951 census the proportion had risen to 18%, and it has been estimated that by 1961 it will be 22%, and by 1971, 28%. In other words, whereas up to the years immediately following the first world war there were about 10 people between 20 and 40 for every one over 65, there are now fewer than six, and 20 years hence there will be fewer than four. If present retirement ages continue there is likely to be a serious shortage of labour before long. Realization of this has led to questions being raised in many quarters whether employment and retirement policies for older people, built up in the early years of the century and in the slump conditions of the 'thirties, are adequate for conditions to-day. Even if they are, it is urged that some measures should be taken now to forestall future difficulties.

The problems of employing older people involve several disciplines. Some are medical. Some are economic, concerned with pensions schemes and pay

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rates related to age. Some are social, such as the effect of the age of retirement upon the age of promotion for younger men. I shall not consider these problems, but will confine myself instead to those which are concerned with some aspect of ability. I do this not only because these are the problems with which I am in closest touch, but because it is likely that many economic and social problems are secondary to them. It is well known that many changes occur with age—eyes and ears become less sensitive, reactions become slower, and ability to learn diminishes. These are facts we cannot escape. It is often believed that we can transfer the implications of these generalizations direct to the problem of employability, but this we can do only in part. Such generalizations are unduly wide, in the sense that they are true only of some people and in some respects. At the same time they are too narrow in that they fail to recognize many other changes which occur. Even when they are true the circumstances may be such that they are unimportant.

One of the commonest policies with regard to the employment of older people is some form of conscious or unconscious selection of a few to stay on while the rest retire. This policy is justifiable in the sense that for almost any job we like to name we can find some older people who can do it well. As we go up the age scale the differences between one individual and another become greater, so that, although the average performance may fall, some individuals will do as well as, or better than, the majority of young men. What is required, however, is a more radical solution than this. We need to specify work which is suitable for the majority of older people, which will enable them to continue at their jobs beyond what is now regarded as the normal retiring age, and in doing so to maintain their efficiency and self-respect, if possible without special allowances.

I will try to summarize the main points about what we know. Some are perhaps obvious, some may be new. As we know little as yet, I make no apology for giving some attention also to the methods of research whereby we can learn more.

Methods of Research

Two points should be stressed at the outset. The first is that our problem is not solely with employment beyond the normal retirement age. Ageing is continuous; by the age of 30 the beginnings of many changes, which become striking in extreme old age, can already be seen. As a result, many of the most important problems of ageing in relation to employment occur in middle age. The second point is that, as in most human affairs, it is that which is unpleasant and distressing to which we are apt to pay greatest attention. Most of the scientific knowledge we possess about ageing is of ways in which capacity and performance get worse as people grow older. There are, however, clearly ways in which age brings improvement, such as steadiness of character, conscientiousness, and patience. Unfortunately these qualities are elusive of precise definition and have so far not proved amenable to scientific study.

Scientific measurement of human performance in relation to age has been of three main types: (a) Surveys, using tests either of performance or of mental abilities, such as so-called intelligence tests. (b) More detailed studies of performance, using laboratory experiments in which people are given carefully designed tasks to do under controlled conditions. (c) Studies of present practice, population trends, age distributions, and labour turnover in industry.

None of these approaches is sufficient on its own. Mental tests show us some of the main outlines of ability, and,

although their results provide only a sketchy picture of human performance, they permit studies to be carried out on a large scale and so give data about norms of performance at different ages which are not readily obtainable in any other way. Such tests have shown that functions such as intelligence, speed of action, strength, and ability to learn by rote all decline with age, usually from a peak performance in the twenties. The decline is slow until the sixties, more rapid thereafter. The shortcomings of tests as commonly used are that the scores lump together many different aspects of capacity, and that we often have little idea of what they measure and whether one unit of score is equivalent to another. They are also not well adapted to the study of what we may call the process of a man's performance—the sequence of events whereby he attains a given end-result.

These disadvantages may be avoided in laboratory experiments which enable us to study performance in greater detail, and give a clearer lead to the understanding of why changes come about. With large groups of people laboratory experiments are too laborious, and this means some uncertainty whether samples of different ages are representative, but with care this drawback can be minimized. I will not enlarge upon the findings of such experiments, because they are the burden of most of what I have to say later. One other limitation upon them must, however, be mentioned. It is seldom possible to use this technique to study performances over a long period of time—usually about half an hour is the limit. We must therefore be cautious when drawing inferences from the results for work done day in and day out. This caution is necessary for two reasons: first, that performance can often be maintained for short periods at a level which is impossible over a longer working spell; and, secondly, it is probable that some of the difficulties experienced by older people in an experiment would disappear with long-continued practice.

Because of these shortcomings, problems of employment must at some stage be studied among people doing their daily work. The value of experiments lies in their helping to sort out genuine age trends in industry which are likely to lead to continuing problems from the multitudinous forces of social and economic pressures and accidents of history which tend to confuse the picture. The task of studying ageing in industry is difficult and demands much more care and clear thought than appears at first sight. It is all too easy on the one hand to leap to conclusions on inadequate evidence, or on the other to become bogged down in a despair of caution over the number of complicating factors which might conceivably be involved.

What we need to do is to take the results of laboratory experiments and to use them to tell us what to look for in industry, then, if the expected age trends are found and they are bad, we need to use our experiments again to suggest ways in which the trends might be minimized or removed.

When we look at industry in this way, it is necessary to look in detail, not at whole industries or factories or classes of work, such as skilled, semi-skilled, or unskilled, but at particular operations. Performance at any task will depend upon the match which can be made between the demands of the task and the capacities of the man doing it. The demands made and the capacities involved can vary greatly according to what at first sight appear to be trivial details of the task. Changes of performance with age will occur when changes of capacity become such that they can no longer be matched to the demands of the task. When this happens there appear to be three logically possible ways whereby a match may be restored: (1) the change in the man might be arrested or reversed; (2) the demands of the job could be modified; and (3) the man could be moved to another job making less severe demands.

Present policy usually concentrates on the third of these possibilities: certain relatively low-grade jobs, such as door-keeping and sweeping, are reserved for old people. This

policy would seem inadequate, however, not only because it wastes the skill and experience of men who were formerly doing higher-grade jobs, but because the amount of low-grade work available is not sufficient for the numbers of old people who will have to be employed.

1. Arrest or Reversal of Age Changes

In so far as changes of ability are underlain by definite organic changes, this line of action involves medical questions with which I am not qualified to deal. There is, however, another type of age trend we can legitimately consider—namely, attitudes and opinions changing with age, which sometimes seem to place older people at a disadvantage. To take one example: older people often lack confidence in their ability to an extent which is not justifiable and is revealed only when circumstances force them to do what they believed to be impossible. This lack of confidence is doubtless fostered by popular sayings and opinions, such as, "You can't teach an old dog new tricks," which are apt to cause exaggerated ideas of disability and lead to unwillingness to try. It may be due also to other attitudes—for instance, the desire to deserve the respect due to age and not to fail in the eyes of younger people; or the belief that hard work brings premature ageing; or, sometimes, bitterness at failure to achieve an ambition or lack of some worth-while goal for which to work.

How to assess these attitudes we do not know clearly at present. We can find out what people say about them, but such statements are often inaccurate, not only because of deliberate falsification but because people often do not realize their true motives. The understanding of these forces is still the province of the shrewd and wise observer, although, when the bogies from which they derive their strength have been discovered, scientists and educators can help in dispelling them.

2. Changing the Demands of the Job

The field which undoubtedly offers the greatest opportunity to improve employment prospects for older people lies in changing the demands made by certain classes of job. Some jobs seem to be such that the skills involved are well maintained into old age, but there are a few important exceptions. Difficulties are not always easy to detect. They may not show in such statistics as production figures, because as a man gets older he seems often to compensate for any growing difficulties by increased care and effort until the strain becomes too great to be borne; then, instead of carrying on at a reduced efficiency, he changes to another job. The reason given for his change may not be a true one. Sometimes, for instance, a change is made ostensibly on medical grounds, but if these are examined they are, as Richardson (1953) has shown, found to be insufficient to account for the magnitude of the change involved. It may sound a surprising suggestion, but I think it is scarcely an exaggeration to say that when a job is found where there is a substantial loss, for almost any reason whatever, of people in the forties and fifties, an age difficulty should be suspected.

We may consider difficulties arising in industrial work under three heads:

(a) Speed

Fall in speed of performance with age is common but by no means universal. It is very much greater in some tasks than in others; and in some tasks at least there is clear evidence that where older people are slower is in perceiving and giving meaning to incoming signals for action rather than in the actual speed of making responding movements. The time required to deal accurately with an incoming signal and to take the necessary action varies with the signal and action involved, but is seldom, for a man in the twenties, less than about half a second (for a review of the literature see Welford, 1952). This is the maximum speed at which we should expect a young man to pick up

items individually from a pile and place them in a machine—with one signal from the pile and one from the machine making one article handled per second. For people in their late fifties and sixties the time seems to have risen on an average to about two-thirds of a second. The implications of this are clear and obvious—we need to reduce the rate at which distinct signals have to be dealt with to the point at which the effective limit of speed at a job is transferred from the reaction time of the man to the operation time of the machine. This can be done in several ways: (a) By grouping signals so that, given the first of a sequence, the ones following can be "assumed" and require only a minimum of attention. (b) By sequencing actions automatically by machine. To carry this to its logical limit would convert the machine operator into a machine minder, but comparatively minor alterations coming far short of this could often make the required difference. (c) By reducing the accuracy required—for example, by making it possible for finished articles to be tipped into a chute instead of having to be placed accurately on a pile. (d) By giving older people larger products to deal with, which take longer to process. This is already done with good effect in some factories.

The amount of perceptual "effort" can be reduced by logical natural relations in laying out a task, as in the commonly used arrangement for an assembly job when one part is taken from each of a number of boxes in turn along a row. This arrangement may not, however, be enough to reduce the difficulty of the task for older people. Probably some indication should also be given which makes it unnecessary for the operative to remember from second to second where he has got to along the row.

It is important to realize that the perception of signals and the shaping of action in response to them can often take place while a previous action is being carried out, so that, if signals for actions are available a little ahead of the time at which the action is required, slowness in dealing with them will not be as apparent as if they appear suddenly and action has to be taken at once.

More subtly, it appears that every time an action starts or stops attention is apt to be deflected, probably by the kinaesthetic stimuli which result from the rapid acceleration or deceleration. This means that if actions can be rounded and continuous they are likely to be substantially faster, especially for older people, than if they are jerky and intermittent. This is an additional point in favour of giving signals for action ahead of time, because when this is done actions can be made to flow into each other smoothly.

Very often speed and accuracy of performance appear to be compensatory. Excessive speed will lower accuracy, and vice versa. In tasks where this relation occurs it is commonly found that older people choose accuracy rather than speed and that the accuracy they achieve often offsets their loss of speed, because they waste less time making errors. The logical conclusion to be drawn from this, which is followed with success in many cases, is deliberately to place older people upon tasks for which care and accuracy are more important than speed.

The most serious effect of speed for older people appears when this compensatory relation cannot be exploited. This is particularly the case with operations which we may call *paced*, where actions have to be taken at a speed which is not determined by the operator, and any slowness will lead to an error or omission which cannot be redeemed subsequently. The best examples of this occur on certain rapid conveyor lines. The numbers employed on these appear to fall away sharply between 45 and 55, so that after 55 hardly any are left. There seems to be little difficulty in recruiting people for these jobs even as late as 40 or 45, and often they seem able to carry on after 55 at the same work if they can do it at their own speed. A possible way of mitigating this difficulty is to introduce buffer-stocks along the conveyor line, which would afford a slight latitude

in the timing of individual items and enable the operator, if he is slow at one moment, to make up time in the next. It should be pointed out that not all conveyor lines have this characteristic of rigid pacing of performance. Some work at a speed which is comfortably below the maximum the operator can stand, and others are such that it does not matter if an item is occasionally allowed to go by (Belbin, 1953).

Mere pressure for speed such as that imposed by piece rates appears to cause less difficulty to older people than does rigid pacing. The reason presumably is that they are able to adjust the speed to suit themselves and to give full play to the advantages they gain from care and accuracy.

A very interesting study by Weston (1949a) of performance at a visual task has shown that poor lighting, small size of detail to be seen, and lack of contrast between objects viewed and their background can lower speed of work between the twenties and the fifties, even when subjects are matched for visual acuity by Snellen charts and Jaeger test types. It seems clear, as Weston (1949a, 1949b) points out, that improvement in one or other of these respects could often raise the speed of work by older people, and that any given degree of improvement would benefit them relatively more than it would younger people. It is also possible, although I know of no evidence on this point, that analogous improvements could be secured in tasks involving listening, as, for instance, when inspection work has to be carried out in terms of the sound made by the moving parts of a machine. Amplifying the sound or keeping down background noise might raise the speed with which faults could be detected under these conditions, especially by older people.

(b) Complexity

Loss of speed or accuracy, or both, appears to be much greater with some more complex tasks than with simple ones. This is not to say that the more complex tasks cannot be done at all, although the maximum possible complexity is probably diminished. Nor is it to say that the longer time taken by older people over a highly complex task may not be accompanied by the application of knowledge which has required a long experience to gather, and which results in decisions and actions having a degree of skill not attainable by a younger man. At the executive level, the implication is that a load of routine work on which occasional important decisions are superimposed is likely to tell on an older man more than on a younger, unless the routine is so simple as to require hardly any attention. Delegation and comparative leisure would seem to be especially important in later middle age if the highest quality of decision is to be maintained.

At the operative level there is evidence to suggest that four types of complication are likely to cause difficulty for older people. First, where actions have to be performed without adequate sensory data to guide them, as, for instance, where a man cannot see what he is doing (Szafran, 1951). Second, where a large quantity of data is presented for digestion all at once, especially if it is in an ill-assorted order—logical sequencing in the presentation of information would seem likely to be helpful to older people. Third, where a quantity of evidence has to be pieced together without using aids to memory such as notes. The fourth, and perhaps the most interesting, type of complication is concerned with what essentially amounts to a kind of abstraction. When we handle an object directly, as, for instance, when we move an object from one position to another by hand, the relation between the perception and the action involved is direct and simple. So it is with hand tools, such as chisels and hammers. It is, however, not so with machine tools, where the direction, force, and form of actions may bear only indirect or symbolic relations to the effects they produce. A very simple example of this is that the turning of a vertical wheel may bring about a horizontal movement of a tool carriage. Research on what are called display-control relationships of this kind has

shown that some are better than others even for younger men. The difference appears to be much greater for older men.

It is possible to get used to any display-control relationship, although unnatural ones may cause temporary difficulty in time of stress and lead to accidents. Persistent difficulty is likely, however, when the relationships keep on changing, as when a man works in turn on several different machines which have different systems of control. I think it is fair to say there is a great need for standardization in machine design, taking already well-verified research into account.

(c) Physical Demands

We are often told that heavy work is unsuitable for older people, and yet at the same time it is clear that a very large number of older people are engaged upon work which is classed as at least moderately heavy (Industrial Welfare Society, 1951). Several reasons have been suggested why they are able to do this work. It may be that physical development acquired when young enables them to continue when old. It may be that the knacks they develop in the course of experience make the work in fact lighter for them than it would be for a younger man. It may be simply that moderately heavy work does not make demands for muscular effort which are beyond the capacity of most normal older people. Discussion of heavy work in relation to age is hampered by a lack of knowledge of what "heaviness" means. We do not know whether it should be assessed in terms of physical effort and, if so, whether the maximum physical effort at any time or the average over a period, or whether it should be in terms of activity which might involve a perceptual factor in the sense that as a man turns to and fro he has to keep on looking first at one thing and then at another. Alternatively, some heavy work seems to be so classed mainly because it is dangerous, demanding either physical fitness and maintenance of balance, as when working at heights, or vigilance, as when handling dangerous materials. It is possible that heavy work as usually conceived means work which "takes it out of you" in any of several different ways, and that it is not really correct to think of all types of heavy work as belonging to a single class.

All forms of heavy work may be contraindicated for some people, and some forms of heavy work for all older people on medical grounds. Where these are absent it appears that while older people show a strong tendency to move away from really strenuous work (Richardson, 1953), they continue on jobs in which considerable physical effort is interspersed with periods of lower demand. It is probably true to say that moderate demands for physical effort cause less trouble to older people who are fit than does pressure for speed.

3. Training

However successful a policy of adapting jobs to the needs of older workers may be, there will be some men and women, as now, who must, or will wish to, leave their jobs and learn new ones in middle life. Such changes are not to be undertaken lightly, because, unfortunately, studies of learning indicate with striking uniformity a fall in learning ability from the twenties or thirties onwards. Beyond this age, learning to a fully adequate level can be achieved by some people and at some jobs, but it usually takes longer, and may therefore be prohibitively expensive. Good performances by a few middle-aged people who do train for new skilled jobs is not a reliable guide to the capacity of the majority, because almost certainly there are many who feel it is hopeless to take up a new skill in middle life, and only those unusually confident apply.

"Learning" is used as a blanket term to cover several distinct processes. The material to be learnt has to be perceived and comprehended. It has to be memorized, retained over a period of time, and then produced for use on a subsequent occasion. Now, there is evidence that

older people can usually remember well what they already know. The difficulty in extreme old age is mainly in the memory of the immediate past. Some people complain of loss of short-term memory much earlier, and we may well wonder whether it begins in a mild way in the thirties, or even the late twenties. These are the ages at which difficulties in training are usually first reported. Once a skill has been learnt it usually survives well into old age. It would seem, therefore, that the problem is really in the actual act of learning, so that the difficulty for older people occurs during the training session itself, and that difficulties in later performance are not due so much to failure of retention as of not taking enough away from the training session.

Difficulties in training seem to be of two main kinds. First, the perception and understanding involved take longer, and training is usually a "paced" task. Measures to avoid this difficulty should aim either at slowing down the pace of instruction, especially in the early stages, or at giving the trainee control over the speed. Thus, for example, we should expect an older person to do better on his own than in a group. Again, there is a little evidence which suggests that, if the trainee's educational level is suitable, written instructions may be better than demonstration. With written instructions the trainee can go back if he misses a point and can ponder anything which is not clear. Another possible means of reducing the time stress of instruction is to prepare for a change of job well ahead and give a trainee some opportunity of getting acquainted with his new job at intervals while he is still working at his old one. It may also be worth while to give rests and pauses during the training sessions. William James said that we learn to skate in the summer and to swim in the winter. His principle seems also to apply on a very much shorter time scale. Learning is often more thorough when brief periods of practice are interspersed with brief periods of other unrelated activity. Just how far this is important for older people is not at present known, but it seems likely that a leisurely and apparently time-wasting instruction would often lead to quicker and more complete mastery than one carried out on more intensive lines.

The second learning difficulty is that the comprehension of a complex task may be very hard to attain. Means of avoiding this difficulty are not well known, but breaking a complex task down into readily comprehended units, and attention to clarity of instruction in terms which are in line with what the trainee already knows, seem obviously worth careful trial and study. There is some evidence that older people are less tolerant of theoretical than of practical instruction, and that they do better if they are allowed right from the start to manipulate the material or try for themselves the machine they are learning to use. The reason seems to be that manipulation helps short-term memory in the same way that writing notes on paper helps with arithmetic. Theoretical instruction is like demanding that the arithmetic shall be done mentally.

When a trainee has failed to learn but is nevertheless forced to do something about a task with which he is confronted, he will inevitably tend to fall back upon his previous experience. This is not only true when training is nominally complete, but occurs also during the actual training itself. During the first training period he will build up some kind of method of doing the task which he will carry over to subsequent periods. If he is fortunate his method may be correct, and although speed may be poor he will improve with practice. If, however, he leaves the first training period with gaps in his comprehension of the correct method, these will be filled from his past experience, which may not be appropriate and may thus lead to errors which will have to be corrected. There is good evidence (Kay, 1951) that corrections of errors of this kind which involve modifying a method already built up are very difficult, so that if a trainee starts wrong he will have disproportionately greater trouble later. The principle is well known in learning games, typewriting, etc. It would

seem to imply that the very first stages of training are all-important and that time spent over these is likely to be well repaid by savings later on.

Past experience can, of course, assist in the mastery of a new task when the task can be carried out by methods already familiar. Confusion seems to arise mainly when the methods required for the new and the former tasks bear some resemblance but are not entirely the same. This leads to the paradoxical situation that it may be easier to learn a new task which can be carried out by methods already familiar than to learn new methods for doing a task which has been done before. Also it may sometimes be easier to make a clean break from an old job than to transfer to a job which is superficially similar.

Other suggestions about training deserve consideration. For instance, older people may not like to take instruction from those younger than themselves or to perform in a manner they think inexpert in the presence of other younger trainees. The means of avoiding such difficulties are obvious. Again, it has been suggested that one of the reasons why older people find it difficult to learn is because they have got out of the way of learning, and that if a person makes a point of learning all through his life he will still be able to learn when he is old. Another possibility is that if a man has once learnt a skill while he is young he can take it up again when he is old, even though it has not been used during the intervening years; so that learning a variety of jobs while young provides a range of alternatives ready to hand if a change of work has to be made in later life.

To conclude, it would seem that, apart from social, economic, and strictly medical questions, we have two important leads towards improvement in the prospect of successful employment of older people. The first is a close scrutiny of methods of work and the design of machinery, especially machine tools. This means that the tackling of the problems of ageing has to be carried back from the shop floor to the drawing-office, and becomes in a large measure the responsibility of engineers. Parallel to this, we need a close scrutiny of training methods and perhaps the establishment and very careful administration of special methods for older people. Both would, I believe, have an important bearing upon the problems of the industrial medical officer, and I venture to suggest that both need the co-operation of the experimental psychologist.

These developments would benefit not only older people but middle-aged and younger people as well, although the proportionate benefit would increase with age. They would not, of course, overcome the problem of age in industry completely, but they could go a long way towards reducing it. The benefits would not all be immediate. There might be some immediate rise in production, but the main advantages would appear only gradually in the stability and flexibility of industry. Stability would increase owing to men being able to stay on a job to a later age, with the consequent avoidance of labour turnover and the difficulties it causes both to industry and to the men involved. Flexibility would be extended in the sense that when necessity dictated a change of work in middle life it could be made with less of the suffering it often entails at the present time.

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