Progress in Industrial Psychology in France

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Research in industrial psychology was, at the outset, aimed principally at improving the selection of workers and their assignment to the various jobs available in the undertaking on the basis of their aptitudes. Today, the growing complexity of the human problems that arise with each new technical advance makes heavier demands on the industrial psychologist; moreover, the task of maintaining harmonious relations calls not only for constant efforts on his part but for a thorough knowledge of all the departments of the undertaking and of the psychology of the men who staff them.

In the following pages Professor Bonnardel gives an account of the part played by industrial psychologists in French undertakings and the factors that make for the success or failure of their work.

ALTHOUGH French industrialists were reluctant for many years to include psychologists on their staffs, a great change has come over their attitude during the past decade. The majority of big firms are now anxious to have expert advice in tackling human problems which, like methods of industrial organisation and conditions of employment and labour, are growing rapidly more complex with every fresh technical advance.

Psychologists concerned with man at his work are not always in agreement with industrialists regarding the tractability and significance of the human problems involved. Their degree of success is naturally governed by their personal ability and realism, but it also depends to a very great extent on the amount of understanding and support they receive from industry.

The following brief historical survey of the origins of industrial psychology in France should help give a better idea of its novelty, achievements, present prospects and limitations.

ORIGINS

Industrial psychology has grown out of the search for a better way of fitting men into jobs in accordance with their abilities. It was the birth of experimental psychology at the close of the last century that gave a few pioneers in academic circles the idea of testing and assessing these abilities experimentally. The first experiments along these lines were far from conclusive and the initial enthusiasm was speedily followed by acute disappointment—a sentiment that certain experimenters dwelt on with some acrimony in their writings. But ups and downs of this kind have regularly been encountered in the history of every branch of applied psychology and are liable to be met even at the present time by those who approach industrial psychology, or try to use it, without fully grasping the complexity and elusiveness of the problems involved.

These early setbacks at the end of the last century were due to the use of techniques that it is all too easy nowadays to dismiss as crude, misleading and inadequate. But they did not result in complete discouragement. In France A. Binet, by patient experiment, evolved a set of tests that later played a decisive part, as prototypes, in the development of applied psychology, although at the time in France they were greeted with little but derision. This particular set of tests, which he published in conjunction with Simon, was designed to assess and classify degrees of mental backwardness so as to place certain groups of children in special classes suited to their mental level.

Binet did not foresee that his work would come to be regarded as a decisive step towards the large-scale use—for the guidance of adults as well as young persons—of tests based on those that he had systematically devised. In fact he wrote in 1911, shortly before his death : " Our method, which is slow and meticulous and requires some apprenticeship, is a luxury that can never come into general use. "

When, after the entry of the United States into the First World War, the first mass experiment was held there in 1917, quite a stir was caused in France. Faced by the need to screen recruits and create an army out of almost nothing in the shortest possible time, a group of psychologists led by R. M. Yerkes drew up a battery of tests along the same lines as those already followed by Binet and tried them out on nearly 2 million men. Despite the undoubted value of the results yielded by this bold, novel venture (and their value emerges clearly from the papers written by Yerkes) the military authorities were still unconvinced when the war ended in 1918 and, whatever may have been written on the subject abroad,

the experiment was in fact put to very little practical use. Nevertheless, news of it, and the success it was thought to have had, attracted attention in France and strengthened the case of the handful of pioneers who had tried with little success before 1914 to arouse the interest of the Government and industry in industrial psychology.

H. Piéron, who as early as 1904 had published in collaboration with E. Toulouse and N. Vaschide his *Techniques de psychologie expérimentale* laying stress on the study of individual differences, succeeded in 1921 in inducing Paris University to establish an Institute of Psychology, which contained a department of applied psychology to deal with industrial problems ; he also succeeded in inducing the *Ecole pratique des Hautes études* to open a laboratory of applied psychology, under J. M. Lahy, who was succeeded by the writer ; in addition, Piéron, together with H. Laugier and C. Fontegne, established the National Labour Research and Vocational Guidance Institute in 1928.

Between the two world wars the psychologist in France, as in many other countries, found few openings in industry. Lahy managed to establish vocational psychology laboratories in some large public transport undertakings (the Paris Regional Transport Board and the Northern Railway Company) and in other concerns of the same kind in a number of European countries. H. Laugier, for his part, organised a laboratory on behalf of the Western Railway Company. But despite their high hopes and a few sporadic experiments in industry, their research was mainly confined to trades where the safety of the public was at stake.

Nevertheless, during the years just before the Second World War, a few factory managements began to look to psychologists for assistance. Ever since 1920 quite a broad view of industrial psychology had been taken in the United States and one or two European countries, e.g. the United Kingdom, under the influence of C. S. Myers, who founded the National Institute of Industrial Psychology in London, and Switzerland, under the impulse of L. Walther in connection with job analysis, an idea that has recently returned to us from the United States under the name of " human engineering ". In France the few industrialists who showed interest seldom thought at that time of calling in psychologists, except for what they called selection problems to be dealt with by the methods developed by Lahy. But some psychologists progressively won the confidence of their firms and became sufficiently well entrenched to be allowed to explore human problems generally and to carry out proper investigations.

This hesitant support for industrial psychology was cut short in France by the tragedy of the Second World War. But it grew

apace after the war—with uneven results—when it was realised what an important part psychological research and methods had played in the United Kingdom, and even more in the United States, in organising the armed forces, manning the munitions industries and settling millions of discharged service men in civilian life.

The enthusiasm that this revelation aroused in France was very useful to the experts of industrial psychology, for managements gave them a readier hearing; but in a wider sense it had the drawback of setting up a heavy demand for psychologists, who at that time were few and far between. The result was a mushroom growth of so-called psychologists who used a whole series of largely worthless techniques. As time goes by the position is slowly being sorted out, but the process is not yet complete.

The need to train young psychologists more thoroughly is now fully recognised in France; the basis of the training is the work of researchers, both in France and abroad, e.g. in the United States and the United Kingdom. The diploma of applied psychology of the Institute of Psychology of Paris University, which could formerly be obtained after one year, now requires a three-year course. The teaching of industrial psychology is also spreading to the provincial universities. A short time ago a state vocational psychology diploma was instituted, which can only be granted to candidates of 25 and over who can supply evidence of a reasonable general education, pass a special examination, spend a period working with an approved body and submit and uphold a paper on a subject of their own choice.

Present Position

As has already been stated, there has been too great a tendency in French industry to identify industrial psychology vaguely with selection procedures, without grasping what might be the consequences of such procedures or trying to find any rational argument justifying their use. It is hard to say how far firms still cling to this outdated attitude; but in many cases the psychologist still seems to be looked upon as nothing more than an expert using special testing methods to make it easier to select men for certain jobs. In some firms, however, the psychologist is given a fairly free hand; he can thus obtain a close-up view of their working and intervene tactfully—and often unofficially—but very effectively in a wide range of human problems.

Despite the scepticism generally shown by employees of all ranks over the advent of the psychologist, his usefulness became

apparent in the rebuilding of the great industrial centres destroyed by the war. Indeed, the work done at that time by some industrial psychology departments proved to be the only way of fitting large numbers of new workers into the right jobs in the shortest possible time. It was found particularly useful in picking out at once the men capable of filling special jobs after very brief training (as skilled workers, technicians and junior supervisors). At that time most of the managerial staff directly concerned were completely baffled by these problems and the psychologists' success dispelled any remaining prejudices against them.

Not uncommonly these local, piecemeal successes made people veer from complete scepticism to extreme optimism and expect far more from psychology than it can give at the present time. The task of the skilled psychologist, and it is a delicate one, is to counsel caution and reliance on nothing but established facts. He knows that he cannot claim to solve any problem completely ; but he also knows that in many cases, by patient inquiry, he can bring about a distinct improvement over the state of affairs he found on first joining the firm.

The human problems encountered in industry vary widely, and this article will deal with the general ones in which French psychologists are interested. While stress will be laid on the psychologist's personal contribution, it must be obvious that the problems he helps to explore are of concern to all employees and departments in one way or another ; in other words, he cannot do his job unless he can count on the wholehearted collaboration of all sections of the organisation and he must make himself thoroughly acquainted with their working. His role in relation to the other departments varies according to the question at issue, but in any event he cannot take effective action unless he is a well integrated member of the staff. Although some circles occasionally seem to doubt this, it is a fact that the staff almost always contains individuals of mature judgment who are deeply interested in human problems and have a good empirical knowledge of them, while remaining aware of the difficulties involved. When the psychologist joins the firm he can draw on these persons for advice and support. He can also enlist the support of those enlightened supervisors who have been won over to the experimental method and are glad that psychological questions are at last being dealt with as objectively as possible instead of being merely a subject for speculation.

For the sake of clarity, the activities of the modern psychologist in certain major French industrial centres can be examined under the following three headings : problems relating to the most efficient use of human abilities ; employees' personal problems ; and human problems connected with industrial organisation.

Problems Relating to the Most Efficient Use of Human Abilities

Psychological Tests : Classifying New Entrants and Planning Their Allocation to Jobs.

Despite the belief firmly held by many people the purpose of giving psychological tests to entrants into large-scale industry is not to make a selection from among the applicants but to have the best possible guidance in allocating them to the jobs available, for the division of labour in large factories today is such that a use can be found for almost the whole range of human ability. The only individuals who cannot be accepted are those who would certainly be involved in accidents despite every technical precaution. Moreover, in times of full employment (as in France today) the only real problem is to adapt the available labour force to the work available, and vice versa. During periods of underemployment (such as occurred in France during the Second World War) large firms that virtually provided whole districts with their livelihood were guided solely by social considerations in filling jobs and tried to allocate them in the way that would help each family most.

Psychological examinations for entrants usually comprise an interview and individual and group tests taken by applicants of all kinds—apprentices, workers, technicians, office workers, engineers, etc. They are held at the same time as the medical examination and for certain trades there are further special tests for particular skills (e.g. for shorthand-typists, book-keepers, turners and fitters). The information obtained through these examinations is used by the appropriate departments of the personnel service in assigning the applicants to jobs in the factory.

This means that all who take part, and particularly the psychologist, must have a first-class knowledge of factories and the jobs in them, in addition to keeping informed of anticipated vacancies and any changes resulting from alterations in technical methods or production schedules. New entrants can only be found the right jobs through planning on the basis of up-to-date information. Quite often each entrant cannot at once be found a job of the kind he seems best suited for, but proper planning will help him to get through the period of adjustment as easily as possible. This is an important problem and one in which the psychologist has a part to play.

Above all, psychological tests on entry make it possible to detect all those applicants with the fundamental qualities that will fit them for subsequent promotion. Of course the way they tackle their first jobs must also be watched, with the help of the

workers' representatives and the supervisors, in order to assess other characteristics (such as their attitude towards their job, and their workmates and supervisors) that cannot be brought to light by the entrance test alone. On the other hand experience has amply proved that this test does make it possible at the outset to discern, with an eye to future promotion, certain fundamental qualities that would otherwise seldom come to light in large mass-production factories.

Thus the test gives each applicant an opportunity to go ahead as far as his inherent abilities allow—whatever his education or vocational training, or lack of them.

The value of this to the firm is equally clear. Before these tests were started, personnel chiefs in some firms complained that they could not find enough suitable candidates for various posts, such as junior supervisory positions. When the tests were introduced they claimed that their best workers would be promoted to supervisors and there would then be a shortage of good men to carry on production. In the end they had to admit that efficient planning from the start, using the information provided by the psychological entrance examinations, could provide perfectly satisfactory solutions in practice. It sometimes appears that personnel chiefs have allowed the memory of the trouble once caused by these questions to become somewhat blurred.

In the historical introduction to this article it was shown how industrial psychologists painstakingly and progressively evolved the techniques that have only recently led to the elaboration of a comparatively short test designed to gauge the industrial value of a man's inherent abilities. Methodical research was needed to achieve this success and will continue to be needed in order to develop the examination methods and improve their reliability, and to devise new scientific approaches to problems as yet unexplored. And, in fact, psychological tests are constantly being overhauled and adapted in the light of the experimental research carried out on them by industrial psychologists. The starting point of this research is naturally a comparison between the test results of the entrants and their performance on the job. This cross-checking would be impossible but for the use of statistical methods, some of which were specially designed for biometric and psychometric research. Roughly speaking, these methods make it possible to classify individuals (grading), to ascertain the degree of correlation between the sources of information about them (correlation techniques), to establish the main factors of agreement underlying these relationships (techniques of factorial analysis), and to determine the effect of a number of variables (tests of statistical significance and techniques of variance analysis).

This research at once struck a snag which had not been foreseen by psychologists and the existence of which industrial circles usually refused to recognise. Of the information about the performance of the job itself, the opinion of the supervisors, naturally enough, always carries the greatest weight within the factory. However, this opinion is often far from being of any real value—a point to which we shall return later. Thus, the principal yardstick by which the usefulness of the tests is reckoned must itself be treated with considerable caution—which obviously makes matters difficult for the psychologist unless he is fully alive to the pitfalls of experimental method and has enough authority to convert industrial circles, which are as a rule firmly convinced of the soundness of their own judgments, to his point of view.

Nevertheless, as a result of patient experiment, tests have been evolved that give a relatively accurate idea of the suitability of individuals for the wide range of jobs found in industry. Compared with traditional academic and vocational examinations these tests have the following leading characteristics : they are standardised, i.e. they are the same, or of an exactly similar standard, for each candidate ; the results are not affected by the personality of the marker ; they cover general subjects that traditional examinations, which in practice are concerned with the knowledge acquired during a particular course of vocational or scholastic training, explore only very indirectly even when they aim to do so at all.

The tests, however, inevitably have certain features in common with other forms of examination, in that the results depend on the interest shown by the candidate and, in any event, can only reveal his present potentialities. Once adulthood is reached, the scope for variation in certain forms of ability is fairly limited, while in others it remains substantial. Accordingly, the findings of a single set of tests should not always be regarded as final, and with some individuals it may be essential to repeat them at fixed intervals.

Psychological techniques other than the foregoing tests, viz. interest and personality inventories, have been advocated, particularly in the United States. These techniques are not widely used by French industrial psychologists, who argue that the replies to such questionnaires by an applicant for a job are dictated by his one concern at the time of making them, which is to join the firm ; and it does not follow—far from it—that he would give the same answers in other circumstances. Experiments on this point confirm that the answers to these questionnaires given by the same persons vary according to the purpose for which they are intended. Naturally, if an employee comes to consult the psychologist of his own accord the whole picture is changed and these techniques can usefully be employed.

Some so-called " character " or " personality " tests have also been advocated abroad, particularly in clinical psychology. They certainly have their place among auxiliary psychiatric techniques, but experimental research into all the systems that have so far been put forward has shown that generally speaking they are quite worthless as far as vocational psychology is concerned. " Character " and " personality " are words that enjoy an immense vogue among the public at large, but despite a great deal of theoretical speculation they are still shrouded in mystery for the experts. They are also favoured by many industrialists, particularly when they wish to fill supervisory posts. Despite the pressure exerted on them, few reputable qualified industrial psychologists in France make direct use of tests of this kind.

The only way of making reasonably sure progress in this subject, which, although important, is elusive and still inadequately explored, is through properly conducted experiments using methods of statistical interpretation and control.

The technique of studying the behaviour of a batch of candidates during group discussions on various subjects was first used, in conjunction with other forms of test, for the selection of officers in Great Britain during the Second World War. It has also been advocated in a number of countries for the selection of executives for certain public bodies and industrial concerns. The technique deserves very careful investigation and this is being carried out in France at the present time ; but, while it appears to be very useful in certain circumstances, particularly for occupations where contact with the public plays a vital part (e.g. for salesmen), there appears to be no justification for using it at the present time in industry, and certainly not for the selection of young supervisors.

In France it is felt that, in the present state of knowledge, no special technique for the study of behaviour can give really useful and reliable guidance as to an individual's ability to adapt himself to industry, except in certain cases that can readily be detected by interview. Useful information can be obtained only by observing the individual's behaviour in his working environment and at his job over a considerable period and by closely following the evolution of all aspects of his behaviour. Such evolution may be very marked, particularly among the younger supervisors, which will make it all the more necessary to show extreme caution in this respect if at some future date new and reasonably trustworthy tests are evolved to identify certain traits of personality at any given moment.

Trade Testing.

Reference was made above to the widespread practice, both in

technical schools and in large-scale industry, of holding trade tests to ascertain the degree of skill acquired by a given course of training. The above-mentioned experimental methods of constructing scientific psychological tests can naturally be used equally well for special types of examination such as the trade test. This is an exceptionally important test in that its results spell acceptance or rejection for a career that has been prepared for over a fairly long period—which makes it a somewhat drastic method of selection.

Surprising though it may seem, until the psychologists took a hand no systematic inquiry appears to have been made into the real significance of such tests. When a study was finally made no one was more taken aback at the results than the trade testing experts who had participated in it. The study showed, among other things, that *(a)* in various types of examination the tests used to judge a given level of knowledge or skill were completely lacking in homogeneity; *(b)* the marks given for the same test varied widely according to the person who was marking—despite the existence of marking scales that were thought by the experts who drew them up to leave no room for confusion; and *(c)* the proportion of successful candidates in the usual type of test fluctuated substantially.

Apart from calling attention to the need for further work to improve the quality of the tests, this research served to show how difficult it is to assess a human aptitude and thereby made industry more receptive to the psychologists' efforts to improve the accuracy of their own tests.

It must be admitted, however, that sometimes—as when research of the same kind was carried out into traditional school examinations—the psychologist's intrusion has been viewed with misgiving. In the case in question the problems raised were glossed over and there was some reluctance to allow the further research needed to improve the position. This negative attitude was, however, probably no more than a momentary reaction.

Study and Improvement of Assessments of Performance.

As has already been mentioned, when a psychologist tries to determine the effectiveness of his tests he looks for a correlation between the results of the tests and information from the factory on the quality of the work done by those who have passed them. This information may cover a whole series of different points, e.g. output, spoilage, accidents, keenness, steadiness, performance of the job in relation to its special features and degree of difficulty, and trade group. Naturally, more direct information is also

desirable and this is usually obtained from the supervisors who are in close day-to-day contact with the workshops. In France, as in other countries, systematic research has been carried out by psychologists to find out to what extent and in what respects these assessments can supply worth-while information. Generally speaking, reports of this kind from workshops employing mainly skilled workers (tool-shops, maintenance departments, etc.) have usually proved quite useful, but the information from mass-production factories has often proved far less satisfactory and sometimes completely worthless. At best, moreover, the supervisor always has a general picture of his subordinates and this necessarily overlies and colours his assessment of particular points of their performance. Experiments at other levels and in other circumstances have demonstrated that this is often the case when we pass judgment on our fellow men.

Inquiries along these lines by the psychologist with the help of industrial supervisors have taught the latter to be less confident in their assertions about their subordinates' behaviour and to examine border-line cases in close co-operation with the psychologist whenever their opinion will be used as grounds for a decision. Techniques for improving the accuracy of these reports on subordinates—largely advocated by American authors—are being tried out in a number of quarters in France; but, although progress in this direction can certainly be expected, care must be taken not to look upon these techniques as a panacea.

Psychological Tests for Those Already in Employment.

Stress has been laid on the value of psychological tests for entrants. In some firms the psychology department has been in existence long enough for most of the employees to have been examined in this way. Some firms had to shut down for various reasons during the Second World War and practically all the employees were examined when the time came for them to be hired or re-hired.

The results of tests held in such conditions are usually far more satisfactory—except in some cases (e.g. to test fitness for promotion)—than tests of workers already in the firm. Obviously the frame of mind of an applicant whose job will depend on his performance in the test is not the same as that of a worker who already has a job and feels that his past performance in the firm ought to be a better guide to his abilities than a test based on methods that may strike him as a trifle odd. The two men are not likely to show the same interest.

On the other hand, it should be added that although in the early days of industrial psychology departments there was some opposition to the idea of asking those already in the firm to take these tests, there was no more trouble on this score after a few years, when everyone could see for himself that the result was often an upgrading and that in no circumstances were there any unpleasant consequences.

Nowadays, in factories where these tests are an accepted feature, a worker is apt to be very pleased if he is asked to take one, as it shows that he has been singled out and that special interest is being taken in his future.

Apart from such individual cases it is essential to have systematic tests of certain groups. For example, periodical tests are needed to gauge the development of aptitudes among young workers, e.g. at the age of 18, and later when they return from military service at 21, when the vocational opportunities open to them are once more reviewed.

In the interests of safety and accident prevention, workers in jobs entailing a certain risk (drivers of various vehicles, overhead and other cranes, handling equipment, etc.) are examined from time to time. Unless there are exceptional circumstances the results of these examinations should normally be satisfactory provided that the members of the staff assigned to these jobs were at the outset required to take the entrance test, together, where necessary, with a special test, and provided also that allowance was made for the effect of age on various aptitudes so that even at the end of their working lives their performance would still be well within the safety limits. By showing foresight in this way it is possible to avoid having to take workers off these jobs, which they often value very highly. Firms that fail to look ahead often run into trouble because, although the supervisors can see that transfers are necessary, the workers themselves quite honestly have no idea of the risks that would be run by keeping them in their jobs.

Where an industrial psychology department has only recently been set up and no information is yet available about the work force as a whole, it may be of interest to test separate groups, e.g. batches of skilled men, to ascertain the characteristics of their trade. Naturally, by practising their trade they may have developed some aptitudes that enable them to do better in certain tests and the information thereby obtained cannot be directly used for selecting candidates who have not developed these aptitudes by working in the trade before.

A further example. It may be useful to test all the workers in a workshop to determine their average level, e.g. so as to find out the reasons for low output in this or that workshop, which

may be due to the technical methods used, the management or the quality of the labour. These group tests can also be useful in building up a balanced work force throughout the factory.

Owing, however, to the disturbance of production that mass tests may cause and to the trouble which, as has already been mentioned, they may cause with the workers, it is preferable where possible to take the results of the entrance tests as a basis. When all the workers have taken these tests the position with regard to a given group of workers or a workshop can be ascertained simply by running through their cards.

Planning Promotion for Workers.

There is no need to dwell on the importance, for the individual as well as the firm, of giving all those with the necessary abilities a chance of promotion. Reference has been made to the use by some factories of systematic psychological tests on entrance and these make it possible to spot—virtually without exception—all those with the fundamental qualities that fit them for subsequent promotion. After preliminary experiments and large-scale trials, it has been found that these tests are the best form of selection for rapid practical training designed to turn unskilled workers into tradesmen in a few months. Inquiries covering large numbers of workers showed that 90 per cent. of them were completely successful in training courses of this kind when selected solely on the basis of the entrance test, while a bare 50 per cent. were successful when the candidates were chosen by their supervisors.

For promotion to technical and supervisory posts, psychological tests are almost irreplaceable as a basic source of information; but, as already stated, it is also essential in such cases to give due weight to performance on the factory floor and in this assessment the psychologist has a part to play. However, in the whole process of promotion testing is used only at the start, prior to training; for any subsequent promotion the guiding factor is the performance of the individual in the lower grades.

Complete fairness in the promotion system can only be obtained through planning with all the available information and forecasts in mind. This process falls into the following three stages: *(a)* detection at the time of the entrance test, confirmed where necessary by a further test; *(b)* study of the individual's behaviour in the workshop; and *(c)* behaviour and performance during initial and further training. There is sometimes a temptation to invert points *(a)* and *(b)* and as in former times to leave it to the junior supervisors to pick out workers for promotion; the psychological test is then relegated to the second place and is merely

used to confirm or invalidate the supervisors' opinion. Experience amply proves that to persist in this course results in overlooking and wasting many abilities and in promoting a high proportion of men who, by and large, are certainly well suited for their former jobs and are docile enough towards their superiors but whose fundamental abilities are somewhat limited. After a time a vicious circle is set up, because the junior supervisors have been chosen in this way and generally speaking lack the fundamental abilities needed for their jobs.

Naturally where the supervisors put forward a special recommendation for promotion and give it their strong support, while tests (repeated if necessary) give disappointing results, the psychologist must make a special inquiry and draw on all the available sources of information before giving a final opinion. In firms where the supervisors are not yet fully convinced of the usefulness of psychological tests it may teach them a salutary lesson to let such cases go through.

Initial and Further Training.

For many years past, big firms have run schools for apprentices where youths between the ages of 14 and 17 are trained up to a standard of skill which enables them to go straight into the factory afterwards.

In France these training courses have been largely reshaped over the past 20 years, although additional research is still required in this field (e.g. into the relative weight that should be given to theoretical and practical subjects, the value of multi-purpose apprenticeships, the age at which the purely practical side is most readily learned, etc.).

A new feature, however, is the scientific development of a whole series of training schemes for adults to fit them for promotion or to improve their skills. Psychologists have played a part in drawing up these schemes and this is another instance where their help can be very useful (in selecting the trainees, adapting the syllabus to their level and mentality, helping to choose the instructors, etc.).

Employees' Personal Problems

Psychological Consultation.

In some French firms where the psychologist's work has won appreciation he is consulted by many people, both on special questions affecting their work and careers and on personal or family problems of a psychological nature. His advice is freely

sought not only by workers from the factory floor and office employees but by persons at all supervisory levels, and this side of his work is therefore of great importance from the point of view of human relations. Sometimes, when the person seeking advice holds a senior position, the result may be a sharp improvement in the atmosphere of his department and in the efficiency of the firm as a whole. These private consultations are entirely confidential and here, as in all his other activities, the psychologist naturally considers himself to be strictly bound by professional secrecy.

Advice at the Suggestion of a Third Person.

Sometimes the man immediately concerned does not come to ask for advice of his own accord, his worries or unusual behaviour being reported to the psychologist by his workmates or supervisor. If this happens it is up to the psychologist to find out what the problem is about and to get the man to talk freely so as to be able to give him sound advice ; all this of course demands a great deal of tact.

Encouragement of Newly Promoted Employees.

Whenever a man has to cope with a new situation, particularly when it involves assuming authority for the first time—whether he is a worker who has recently been promoted to chargehand or, to take another example, a young engineer who has been given a job involving some responsibility—he goes through a period of psychological adjustment that varies in difficulty according to the person. The psychologist can be very helpful in easing this adjustment provided he is well established in the firm, knows what goes on and has won confidence on all sides ; being outside the line of command in the workshops and other departments he can act in this way more readily and effectively.

Human Problems Connected with Industrial Organisation

It is chiefly, however, in connection with the problems described below that the psychologist must work as a wholehearted member of a team made up of all the departments interested in and responsible for the organisation of the work, e.g. departments dealing with personnel, production, work study, inspection, accident prevention, etc. Sometimes he has to work closely with the works doctors and shares various responsibilities with them according to the nature of the subject, the duties allotted to them and their specialised knowledge. If close, friendly co-operation exists they can present a united front to the other departments.

General Environmental Factors in Industry.

Where the physical environment is concerned, the works doctor's opinion naturally carries most weight. If the psychologist is specially qualified in psycho-physiology he may be called upon to advise on questions connected with visual conditions (colour schemes, natural and artificial lighting in offices and workshops, e.g. to take recent cases: the advisability of fluorescent lighting or, for certain purposes, sodium lamps) and auditive conditions (e.g. industrial noises and their possible ill effects and the prospects of protection and improvement).

The human environment in industry is, naturally enough, primarily the psychologist's concern. Attempts to bring about good relations within each group (workers, supervisors, technicians, office staff, management) and between the members of different groups creates a whole series of well-known problems. These are inevitable wherever men are formed into groups and are all the greater here because considerations of prestige and financial interest enter into the picture. To claim to be able to smooth out these problems altogether would be to show a singular ignorance of human psychology, but it is possible to mitigate their effects, largely by concentrating on the relationship between subordinate and superior. It is, nevertheless, a fact that even the methods that appear to be the most straightforward do not always work out very well. In France, as in other countries, a number of more or less standardised procedures and practices dealing with " human relations " or " industrial relations " have been tried out on a very large scale in various firms, but the results seem to have fallen short of the hopes placed in them. In fact in some cases the psychological impact has been rather the opposite of what might, rather naïvely, have been expected.

There are many other methods that can prove useful provided they are carefully adapted to local conditions. A few examples are mentioned below.

An important initial point—which is often overlooked—is to avoid putting a man in a job he is not fully capable of doing. Anomalies of this kind are encountered even in important posts, although there are fewer of them in industry than in other walks of life. In some factories, as the standard of the chargehands and foremen is progressively raised by selection on entrance in accordance with the psychological test and by a more careful choice of men for promotion, it has been found that the relations between workers and the supervisory grades have shown a marked improvement.

Sometimes better relations can be achieved by bringing the heads of departments together around a table to thrash out technical problems of common interest, although the degree of success depends on the skill of the person organising these discussions.

But the best results can probably be achieved by bringing about a change in the general atmosphere of the whole factory. The management is best placed to decide on such a change, to carry it into effect and to see that the entire staff play their part. Naturally it needs a great deal of perseverance to effect a gradual and steady change of attitude—which is chiefly necessary at certain points of the system—on the part of all grades ; but experience shows that the results are usually well worth waiting for. The psychologist in particular, not being in the direct line of command, can do useful work in improving the general atmosphere, provided the management is willing to back him up and help him.

Special Characteristics of Industrial Work.

Better methods of industrial organisation, coupled with technical progress, have resulted in the growth of mass production, which, directly or indirectly, is bringing increasing benefits to the population as a whole, while requiring steadily less physical effort.

The efficiency of these methods is largely achieved by breaking jobs down and co-ordinating them ; this means, in turn, that all industrial workers, irrespective of their jobs, must maintain a high and steady volume of output. Moreover under modern conditions the work of a high proportion of them consists of performing a few operations over and over again throughout the working day.

The harsh side of life in modern industry has rightly been emphasised by many writers and a wide variety of opinions has been put forward regarding the advantages and disadvantages of this development. But those who hark back to the " good old days " are too often apt to overlook their precariousness and, in any case, whatever opinions one may hold, technical progress cannot be reversed ; it is in fact spreading to countries that it has not hitherto touched.

With the advent of new sources of energy, new materials and new, more highly automatic machinery, another radical change resulting in higher production with less human effort can be expected—with approval by some, and misgiving by others. Everyone is entitled to pass judgment on these issues, the industrial psychologist among them. He, more perhaps than anybody else, is aware of man's inability to plan changes in community life to cope with the technical power that has been unleashed. Moreover,

living as he does in constant touch with industry, he is more diffident than the other experts in the human sciences about his contribution to the modern industrial world in which he exists on sufferance.

In France, as in other countries, the production experts have made great progress in recent years in applying a number of straightforward principles of organisation, job simplification and the adaptation of the job to the worker. The result has been a substantial increase in productivity and a fall in the physical effort required. Their experience in calculating the standard time needed to perform each individual job is very useful for planning purposes and often brings to light serious anomalies, by removing which they can allocate the work more fairly. But they are often tempted to stick rigidly to the rules and tables supplied by certain organisations specialising in so-called " scientific " management and alleged to be based on exhaustive physiological and psychological research. While it is true that for a number of industrial jobs the momentary maximum speed can be calculated fairly accurately, the daily output that may be expected of each worker can, as yet, be estimated on the basis of empirical data alone. Of course, a great deal of laboratory research—physiological as well as psychological—has been carried out on these subjects and on the possible effects of work, particularly fatigue, monotony and boredom. This laboratory research has been conducted in special circumstances (sometimes under much more arduous conditions than are actually encountered in industry), but it has only covered limited periods (a few hours or days). The main result has been to show how complex these problems are.

While, on the whole, this research has given rise to some very interesting theories about human work in general, it has not produced any simple rules that can be used in practice for assessing individual jobs. Above all, in the present state of knowledge, it appears to offer no reliable guidance in reckoning the " optimum tempo " and " rest coefficient " for any given job. In France the industrial psychologist needs a great deal of tact in pointing out these facts to his technical colleagues.

To take quite a different topic, a psychologist who knows factory life at first hand is distinctly surprised to come across books giving the impression that conditions in modern industry are morally, socially and intellectually degrading and liable to cause mental disorders. Research by industrial psychologists in France does not bear out these gloomy conclusions.

As far as the moral aspect is concerned, some very moving, not to say shocking, descriptions of factory life and its conflicts have come from the pens of French novelists. It should be added that

they have just as crudely—if not always as violently—dramatised other walks of life that they probably knew more about.

From the social standpoint, the main effect of technical developments on employment has been to cause a shift from agriculture to industry. Industrial psychologists are in a position to state that this shift is in fact looked upon as a distinct social advance. It is surprising to notice the persistence with which some writers compare the handicraft worker of yesterday with the labourer or semi-skilled worker of today, for the son of yesterday's handicraft worker is usually a technician or a foreman today. Here too, as a general rule, there has been a rise and not a fall in social status as between one generation and the next.

Realistic accounts of life in nineteenth century factories have certainly left their mark on the outlook of many intellectuals. Moreover, working conditions that are very bad from more than one point of view still exist ; but they are encountered in precisely those trades that have not kept up with technical progress, while in the modern firms they are steadily being eliminated. To anyone who has witnessed the changes in the big factories over several decades, the progress has been striking and there is promise of many further improvements.

On the intellectual side, the industrial psychologist can state that repeated tests reveal no decline in a man other than the very slow one that normally occurs as he grows older. Comparisons between tests taken on entrance and after a year or two in a factory very often show, indeed, a sharp rise in the intelligence of those who had not previously worked in industry.

As far as " mental disturbances " are concerned, it is a well known fact that persons in certain occupations are prone to them and that research has shown that people who find it difficult to settle down to a regular working life prefer certain occupations (cases of this have been noted in the building industry) ; but French psychologists have not found that work in industry, in its usual forms, has any real effect, except at times that are troubled by external events. Only during periods of tension due to events unconnected with the factory, e.g. mobilisation, war, foreign occupation, and bombing, has the writer had to deal with a large number of cases of mental disturbances in industry—and they were quite slight and transitory. All classes of employee were affected. Apart from this, only one significant rise in the number of consultations was noted and this was during the period of intense industrial reorganisation that followed the Second World War. Those affected were not manual workers but members of the staff with heavy responsibilities, who were overworked and had already suffered severe physical and mental strain because of the war.

The exacting features of industrial work have come in for some emphasis here. On the other hand, the drab lives and boredom from which many people suffer are certainly not confined to our own age or to our system of industrial organisation, as would sometimes appear to be suggested by certain writers : they have troubled every generation. Hardly anyone above a certain mental standard has not to some extent suffered in this way at certain stages of his life, both at work and away from it.

The psychologist can only add his efforts to those of all who are eager for a further improvement in the condition of mankind. In France, whenever he is given an opportunity of entering the industrial world, he welcomes any technical change that can ease man's lot and willingly makes his own modest contribution, while remaining alert to any aspects of these changes that may be psychologically harmful. At all times he must try to maintain complete independence of outlook and allow himself to be guided only by the ascertainable facts, for his field is one in which ignorance is rife and argument is too often governed by emotion.