Applied Psychology

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HUGH COOLICAN

Hodder Arnold

A MEMBER OF THE HODDER HEADLINE GROUP

Introduction to Applied Psychology

chapter 1

When I switched from physics and maths to psychology and philosophy in the first year of my university career, friends and family retorted with: 'That's all very well, but what can you do with it?' At the time, the only applied psychology I could have imagined would have been a bearded Freud asking his supine patient about all manner of normally taboo personal secrets. Until just after the Second World War it would have been unusual to encounter an applied psychologist working independently outside a university. The number of professional psychologists helping clients with problems gradually increased in the years that followed, but it was in the last years of the twentieth century and the first years of the twenty-first that numbers rose significantly, as will be detailed below. It is still possible to say, then, that now is a good time to think about becoming an applied psychologist, and this book is all about what you can do with psychology should you decide to earn your living by applying psychological knowledge to human problems. A large part of the book also covers the kind of content you will find in many undergraduate and other courses in applied psychology, with the emphasis here being on how psychology can be applied to everyday life and problems. So let us expand on what we mean by applied psychology.

WHAT IS APPLIED PSYCHOLOGY?

Applied psychology is the use of theory and findings in psychology to solve practical problems in important areas of the human environment, including education, health, the workplace, and so on.

It is customary to think of an applied science as the already established theories and findings of 'pure' or 'real' science being applied to practical problems in the everyday world. Physicists

develop theories of mechanics; engineers apply these principles to the building of bridges. Box 1 provides a fictitious example of what might be considered the ideal of applied science.

Box 1 How application might work in the 'hard' sciences – a cereal submarine

Imagine that the projects manager at Cereal Toys plc is given a problem one morning. 'Look, Julia, we've got a great design, but we need some scientific input on this one. We need an object which is safe if it is accidentally eaten. What we would really like it to do, however, is to sit in the kiddy's bowl of milk until the surface dissolves and it then looks like a submarine and starts to chug around the bowl. Can you get the boffins downstairs on to this one in a hurry?' The 'boffins' will work in an entirely systematic and scientific manner, drawing on a store of known properties of chemicals and, in the case of some projects, theories of why some matter behaves as it does. The theories employed are usually tested so accurately that predictions can be made and progress achieved quite rapidly, so long as the problems require no breaking of new frontiers. There is no *single* correct path here either. The scientists may have *several* possible solutions, but each one will be effective – it *will* work.

Even in the 'hard' sciences, the traffic is not always one-way like in Box 1; it is not always a case of applying existing theory and findings to a new practical problem. It is frequently the case that a discovery 'in the field' leads to the development of new theory and research directions. A medical team may come across a new form of a disease, or an unexpected effect of brain damage, for example, which would mean a dash back to the laboratory to check out the implications for existing theory, and perhaps, eventually, to change it. Note though, that the dash is indeed very often back to the rarefied atmosphere of the laboratory. Psychologists do not often work in laboratories, and when they do they are likely to be accused of producing findings that hardly apply to 'real life' – more of that debate later.

In psychology the traffic has always been very much two-way. There is not really an independent body of theory and research which can be taken down from the shelf by the applied psychologist who needs to deal with a specific problem. Much of the theory and research that applied psychologists use was originally created or stimulated by people we would now call 'applied psychologists', and quite a bit of that only subsequently worked its way into the mainstream content that is covered in general psychology courses. In the early days, many psychologists were out in the field, working in applied areas, and they *created* many of the basic concepts and general theories that we read about today. Although these theories and concepts may have been significantly modified, the development of early psychology itself often went hand in hand with improvements psychologists were trying to make in the fields of education, mental health, organisational change or personnel relations (see Box 2 for a few examples).

Box 2 The role of applied psychology in general theory development

- Intelligence tests, and the whole subsequent theory of general intelligence and its factors, started with an attempt by Binet to respond to the French government's appeal for a way to identify and deal with children with learning difficulties in the normal school system (Binet and Simon 1915).
- The famous research methods concept of the 'Hawthorne effect' was a product of an expansive series of work-psychology studies conducted by Mayo (1927) at the Hawthorne Electrical plant near Chicago, which investigated, among other things, the effects of environmental and social changes on worker productivity.
- Hovland and his colleagues (1949) developed an original and influential model of attitude change during the Second World War, while working on the practical matters of altering US citizens' attitudes towards eating offal (meat became scarce), cleaning teeth and helping the government to persuade US fighting forces to accept that the war in South East Asia might be prolonged.
- Freud's construction of the psychoanalytic understanding of the human psyche was achieved on the basis of the work of a few doctors working with psychologically disturbed patients.
- Bowlby (1980) was working with delinquent children when he promoted his famous and controversial theory linking the strength of attachment of children to their mothers with a raft of later behaviour and personality disturbances.

Psychology as a less than perfect science

In psychology, then, the situation could never be as clear-cut as in the Cereal Toys problem (see Box 1). There is very little theory or factual knowledge within psychology which will guarantee that a solution to a problem will 'work' every time it is tried, or that it will 'work' on identified individuals. Some psychotherapies are found to be generally better than others, but none can be absolutely guaranteed to have a positive effect on all those to whom it is administered. Similarly, there are popular ways to motivate a workforce or attempt to change attitudes on health issues, but people are just not much like those little submarines in the cereal product problem – each person will not behave in the same way as another, even though external circumstances are almost identical. Cereal toys vary ever so slightly, but not enough to upset the outcome of well-calculated equations. People vary enormously and psychologists' ability to predict performance from a known history, with control over several current variables, is exceedingly crude compared with the control that cereal toy boffins can exert over edible chemicals. Furthermore, there are relatively few reliable 'facts' of psychology and there is no one theory that is absolutely 'correct', nor even a general approach that is universally accepted. Physicists and chemists, despite the fact that their knowledge is not perfect, can use known theory to make fairly precise predictions. The calibre of predictive accuracy in mainstream psychological research is just not in the same category.

How is psychology applied?

Does this mean that psychological science cannot really be applied? There are several answers to this, the first of which concerns just what kind of science psychology is. We shall expand this concept below, but for now, the first important point to note is that psychology is a social science. Most of the research knowledge in mainstream psychology is based on studies of groups of people rather than individuals. Usually we cannot predict that a memorising technique will produce improvement in any particular individual, but we can be fairly confident that the overall performance of a group, say 15–20 people, will be higher when using the technique than when not. We cannot predict which individuals will stop smoking as a result of a health-based advertising campaign, but we can be almost certain that a significant number of people *will* stop as a result of it.

Second, working with and studying people is not like studying chemicals. People react; people know they are under study; people have freewill and can change their mind or behaviour as a result of knowing what is expected of them, either to conform or to be contrary. Third, and related to this, psychologists are not working with phenomena that the lay person does not understand or is not familiar with. Before psychology was born as a research subject there were plenty of managers and leaders able to control people effectively, plenty of sports trainers, plenty of observers of the 'criminal mind'. Applied psychologists often have to work with professionals who already know a lot about their fields, so they need to add something in order to be taken seriously and to generate credibility in their particular field.

A question we can ask, then, is how can the applied psychologist convince professionals in their field that they have something to add, that they are better informed than any thoughtful person who uses 'common sense'? What sets the psychologist apart from the manager or the journalist in describing and explaining behaviour, especially when (as is often the case in applied psychology) the focus is on an individual and not a group?

THE ROLE AND CREDIBILITY OF THE APPLIED PSYCHOLOGIST

The professional psychologist

Anyone can put up a plaque outside their door and call themselves a 'psychologist'. It is not illegal to do so, even if you have never formally studied psychology. The fact that a charlatan might use the term 'psychologist' may have some weight in a civil court case involving more general fraud, but the simple act of claiming to be a psychologist is not in itself a crime. Calling yourself a doctor when you are not would certainly put you in line for criminal proceedings. The British Psychological Society (BPS) has long sought some kind of statutory status for practising psychologists of the type that doctors and nurses enjoy. In spring 2005, in response to

BPS representations, the government issued a consultation document on statutory regulation, which proposed that psychologists should be regulated by the Health Professions Council (HPC). The BPS raised several serious objections, not least being the fact that most psychologists work outside the NHS. In September 2006 the BPS issued a statement to members arguing that two recent government reports on the matter still approached psychologist regulation from an NHS perspective and still proposed the HPC as regulator. The BPS is arguing for a new, more appropriate regulatory body.

In the meantime, however, applied psychologists do have *some* formal status – wrongly calling oneself a 'Chartered Psychologist' *would* have legal implications. What the BPS has achieved, since 1987, is the establishment of a Register of Chartered Psychologists. These are psychologists who have undergone a rigorous programme of training and practical experience, which satisfies criteria laid down by the BPS, and which usually involves at least three years of learning and practising alongside qualified supervisors. Hence, chartered status is a form of kitemark for psychologists which should reassure the public that they are consulting a competent, experienced and professional practitioner.

A chartered psychologist is entitled to use the title 'C. Psychol' and can be described as a:

- Chartered Clinical Psychologist;
- Chartered Counselling Psychologist;
- Chartered Educational Psychologist;
- Chartered Forensic Psychologist;
- Chartered Health Psychologist;
- Chartered Occupational Psychologist.

Training for clinical and educational psychologists currently includes the acquisition of a doctorate, so these chartered psychologists will also use the letters PhD and be titled 'Doctor'. Chartered status is granted by the BPS, but professional psychologists are likely to belong to the BPS whether or not they are chartered. The BPS has been growing fast since the first edition of this book was published in 1996. At that time, within the British Psychological Society there were 14 sections, just 5 divisions and 4 special groups. The greatest change has been among the divisions, which now number 10 in all, the newcomers being Health, Neuropsychology, Sport and Exercise, Teachers and Researchers, and Occupational. A 'division' is defined by the British Psychological Society as a grouping which caters for the professional interests of members; a 'section' is defined as being available to members with an interest in an area of psychology; and a 'special group' is designated as a forum for professional work that is at present insufficiently debated. With this in mind, it is to be noted from Table 1.1 that Health Psychology was a Special Group in 1996, with 858 members, but by the end of 2005 it was a Division, with 1156 members. During the same period, Occupational Psychology moved from a Section to a Division, with an increase in membership from 2398 to 3259. The membership of the Division of Clinical Psychology increased from 3474 to 5884, while Counselling Psychology membership increased from 1126 to 1738. The most interesting change, however, was the establishment, in the early twenty-first century, of the Special Group in Coaching Psychology, which now boasts nearly 2000 members. These do not all, as it might sound, belong within a sport and exercise psychology context, but might be members from the Divisions of Occupational, Educational and Child or Counselling Psychology who are interested in training and personal development.

Working in a scientific manner

Most psychologists would agree that their approach to research and the investigation of problems is scientific, although there are disagreements about which methodology is appropriate and the extent to which psychology should try to mimic the physical sciences (see the debate about quantitative and qualitative methods in Chapter 11). However, most would probably agree that there is a logical procedure for testing hypotheses which are generated when trying to explain human behaviour. Table 1.2 overleaf outlines these hypothesis-testing procedures, providing an example (column 2) that might occur in purely academic psychology, and then utilising the same procedure to tackle a practical problem that might be faced by an occupational psychologist (column 3).

In lines one and two of the table a hypothesis is proposed. A hypothesis is a claim about the world that is then investigated by trying to find evidence

DIVISIONS		SECTIONS	
Clinical (DCP)	5884	Education	531
		Social	495
Education & Child (DECP)	1343	Developmental	591
Occupational (DOP)	3259	Cognitive	487
Forensic (DFP)	1604	Maths, Stats & Computing	147
		History & Philosophy	190
Scottish Education (SDEP)	246	Psychobiology	175
Counselling (DCoP)	1738	Psychotherapy	573
Teachers & Research (DTRP)	383	Transpersonal	366
		Psychology of Women	337
Health (DHP)	1156	Consciousness & Experiential Psychology	275
Neuropsychology (DoN)	809	Lesbian & Gay	263
Sport & Exercise (DSEP)	592	Qualitative Research Methods	1575

SPECIAL GROUPS	
Psychologists and Social Services	131
Coaching Psychology	1977

Table 1.1 Membership of BPS Divisions, Sections and Special Groups, end of 2005
Courtesy of Graham Bennett, Business Information Manager, British Psychological Society

which supports it. In the pure theory example, the hypothesis is generated from questioning the explanation of an observed laboratory effect – is competition necessary for social facilitation to occur? The second hypothesis is generated in the process of trying to explain differences in job attitudes. In each case, a possible test of the hypothesis is devised and a clear rationale is produced which states what result would be expected for support of the hypothesis under test, for example: 'If competition is not necessary for social facilitation to occur, and observation alone produces the effect, then we would expect the group performing in front of an audience to produce higher task performance.'

The research design is then devised, paying careful attention to any variables that might confuse the result – often referred to as possible *confounding variables* (see Chapter 11). The *design* is the overall structure of the research study, and dictates how data are gathered and in what form. The idea is to obtain data in as clear and unambiguous a manner as possible. For instance, we would want to ensure that the high and low democratic leaders were not also different in the level of their aggression, or in any other characteristic that is likely to lower job satisfaction among team members. If they *did* differ in this way, the difference would *confound* any effects of democratic style, and we might conclude that low staff involvement caused dissatisfaction when the actual cause was the aggression of the team leaders. We would have a flawed design.

An important feature of this scientific approach is that the hypothesis is tested using *clear and observable measures* of performance. In the pure theory example there is such a measure of performance – number of 'e's crossed out in a set time. In the job satisfaction example we encounter one of the particular strengths of a psychological approach. Whereas charlatans might produce a poorly designed questionnaire, psychologists use a long-established and rich tradition of good scale design in the form of *psychometric tests* (see Chapter 11).

Finally, when a result occurs in the predicted direction, psychologists never talk about 'proving' anything. They do not claim, for example, that they

	Pure theoretical approach	Investigation of field problem
Observation	Previous research shows that people work harder when in competition with others, but could the increased performance ('social facilitation') be caused solely by the *presence* of others?	Workers in some departments of a company are more motivated and have higher job satisfaction.
Hypothesis generation	Participants observed by an audience work harder than participants working alone.	Team leaders who involve the whole team in decision-making have more satisfied staff.
Hypothesis test	Ask participants to cross out all letter 'e's in a newspaper article; one group works alone, another group is observed by six students.	Measure satisfaction of teams with more and less democratic leaders, using well-established psychometric tests and/or careful observations.
Careful research design	E.g. ensure observers behave in exactly the same way for all participants.	E.g. ensure more and less democratic leaders are not different on other significant qualities.
Result (operational measures)	Participants working with an audience cross out more 'e's in a set time than participants working alone.	More democratic leaders do have more satisfied team members.
Interpretation	Supports hypothesis that an audience alone will improve performance – but were the two groups of participants equivalent on the task to start with? Do the findings also support other theories?	Supports original hypothesis – but did the two teams work under similar conditions? Are there other explanations of why the two types of team differ?

Table 1.2 Use of scientific method in general and specific research

have 'proved' that an audience improves performance. They would claim only that they have provided evidence which *supports* this hypothesis. After all, some other feature of the experimental situation might be responsible. In the work-psychology example, the teams led by low democratic leaders might also have been working in more stressful or frustrating work situations, and this might be the real cause of the observed differences in job satisfaction.

The features of a scientific, or at least an objective approach by applied psychologists include:

- planning a fair test of a hypothesis;
- conducting as unambiguous a research design as possible;
- careful observation and measurement of variables;
- unbiased collection of data;
- careful and appropriate analysis of results;
- keeping an open mind about interpretations of those results, and being ready to accept and test alternative explanations;
- publishing the results of investigations in a public forum (e.g. psychological journals and conferences).

These features would apply when qualitative as well as quantitative work is being conducted, except that there may be no hypothesis test and no specific measurement of variables. *Qualitative work* (see Chapter 11) is becoming increasingly popular as a methodological approach within applied psychology. It refers to the gathering of data which are not numerical measures, but which (very often) consist of verbal data from interviews, discussions or observations, and sometimes pictorial data such as murals, drawings or graffiti. The data are frequently used to construct a thorough and

meaningful model of a phenomenon, such as people's perceptions of the causes of their smoking habit or how they view physical abuse.

Adherence to a professional Code of Ethics

In 2006 the BPS published a new *Code of Ethics and Conduct*, which covers both research with human participants and practice with clients. This and several other ethical papers are available at: http://www.bps.org.uk/the-society/ethics-rules-charter-code-of-conduct/code-of-conduct/code-of-conduct_home.cfm

Research ethics are discussed fully in Coolican (2004), but the basic principles are as follows:

- to leave the participant in the same state as they were in at the beginning;
- to respect privacy and confidentiality;
- to treat people with sensitivity, respect and dignity;
- to foster trust, generally, rather than any suspicion, in the authenticity of psychological research and practice.

This marks a clear distinction between the professional applied psychologist and the journalist or charlatan. Becoming chartered means accepting these standards, as does simply being accepted as a member of the British Psychological Society. Anyone found to have violated the Code can have their chartered status removed and, ultimately, can be expelled from the Society.

Being a practitioner-researcher

We have emphasised that being an applied psychologist does not simply involve applying existing psychological knowledge to human problems. Ideally, the full role involves the application and *creation* of knowledge. By applying psychological knowledge to (or by initial investigation of) a human problem, applied psychologists can contribute to knowledge, and, as has often been the case in the past, initiate a whole new theoretical context (see the examples in Box 2 on p. 2).

The ideal role of the applied psychologist is both as *practitioner* – in the field, using knowledge of psychology to solve human problems – and as *scientific researcher* – conducting research investigations in the field or laboratory to provide evidence to support hypotheses or to generate new concepts. In some fields, especially clinical psychology, this has become known as the *scientist-practitioner* model. As indicated above, scientific research can be undertaken at a rather general level or implemented in a single case – for instance, using hypothesis testing to figure out what precise events trigger an outburst in a child with poor classroom behaviour. Practical programmes for change implemented for clients by applied psychologists are known as *interventions* – they are like experiments, but are carried out not simply to gain knowledge or test a hypothesis, but to produce change in humans for what is considered to be the humanly better. Quite often an intervention is implemented not by psychologists but by other professionals (e.g. nursing staff), and the applied psychologist's role is to *evaluate* the programme, for example, by taking before and after measures of people's adherence to a course of medication. As a research design this would be referred to as a *quasi-experiment* (see Chapter 11) because the variables are not controlled by the psychologist who takes measures and analyses findings.

The point to emphasise here is that we would expect a practising chartered psychologist to incorporate scientific thinking into their practice, even though the interpretations of 'science' might be quite broad. We would expect that they would operate according to the basic principles of research ethics listed above. We would expect that, when planning any treatment of, or problem-solving with clients, they would make thorough use of published research in drawing up their plan of action. Charlatans standing outside shopfronts in London streets may call you in to undergo a 'scientific' test of personality, and they might claim to be using scientific thinking and research in their costly programmes. However, you will probably find that the kind of 'science' they operate with has a closed system. Any results that conflict with the theory might be conveniently ignored, or simply incorporated with an 'additional' (but gratuitous) explanation. For example, a person whose behaviour is extroverted, yet who scores as an introvert, might be accused of presenting a 'false' personality. This is the difference between charlatanism and a scientific approach: in a truly

scientific approach, evidence can be contrary to existing patterns, and theories are permitted to compete with one another; the emphasis is on open, public research and the weighing of findings in terms of their apparent support for one theory or another. Rather than worrying about the hard-edged sound of the term 'science', we can consider that a scientific approach in applied psychology demonstrates this willingness to allow conflicting theories and to always consider all available evidence.

Tensions in the practitioner–researcher role

It is a fairly common complaint of professional applied psychologists that they get precious little time to indulge in research since they spend so much of their working day with clients, especially in clinical and educational psychology. Norcross, Brust and Dryden (1992) found that most clinical psychologists published no research work in any one year and that just 8 per cent published over half of all research articles. In 2003 a survey found that clinical psychologists in only 19 out of 371 equivalent full-time posts in Scotland were involved in research and audit.[1] We can see from the quotation on p. 188 (Chapter 8) that Fletcher (2003) believes that few occupational psychologist practitioners are actively involved in research, but for very different reasons from those working as clinical psychologists in the NHS. For the latter, reasons stated are often to do with the pressures of waiting lists and face-to-face client contact, along with the perception that research is not valued by NHS organisations.[2] For occupational psychologists, not conducting full research can be a matter of commercial survival. Companies may see occupational psychologists as providing a useful service in areas such as the provision of training, team building, evaluating an incentive scheme or assessing work motivation. If the occupational psychologist demands that interventions are run as full scientific experiments, which would require random selection of employees into control and experimental groups (see Chapter 11), few employers would be prepared to spare the resources. Doyle (2003: 39) reports a colleague's comment: 'If I tell my clients that I *must* evaluate my interventions in their organisation, they'll just get out Yellow Pages and look up the nearest management consultant.'

Anderson, Herriot and Hodgkinson (2001: 392) argue that the gap between practitioner and researcher in occupational psychology is growing wider, even though work psychology, throughout its history, has benefited from a strong research-practice link, with 'robust research [informing] best professional practice, whilst simultaneously informed practice in the field has stimulated new direction for research and theories [in work psychology]'.

Although their model is developed within the context of work psychology, it can be considered here as applicable to all applied disciplines, though each will have different levels of practitioner-researcher divide and different reasons for the gap. What Anderson et al. propose is that we look at the divide along two dimensions. The first they call 'methodological rigour'. This refers to the extent to which any research or intervention is conducted along rigorous scientific lines, with careful control of conditions, allocation of participants to treatments, well-standardised or piloted measures, and so on (see Chapter 11). The other dimension is one of 'practical relevance', being the degree to which the research carried out is applicable and obviously relevant to practical problems which a practitioner might encounter in their everyday activities. At the extreme opposite end of this dimension, work is perhaps valid, but bears no resemblance to real-life problems. In mainstream psychological research of the past, examples of 'impractical' or unrealistic research might be the learning of nonsense syllables or the simulation of 'social loafing', using a task where 11- and 14-year-old children 'share the job' of counting tones played into headphones.

Four different cells are produced when we assess each piece of research as either high or low on rigour and either high or low on relevance. These are shown in Table 1.3. Anderson et al. argue that *pragmatic science*, where rigour and practical relevance are both high, should dominate in work psychology, and presumably in any applied field.

[1] Referred to in conference notes: *Psychology into Practice: Developing a Framework to Support the Improvement of Health.* Report of a national conference, October 2005, NHS Education for Scotland, available at: http://www.nes.scot.nhs.uk/psychology/Conference%20Documents/documents/Confreport-final.doc

[2] Ibid.

Practical relevance	Methodological rigour: Low	Methodological rigour: High
High	Popularist science	Pragmatic science
Low	Puerile science	Pedantic science

Table 1.3 Types of research, high or low in rigour and practical relevance
Source: Adapted from Anderson et al. (2001)

A drift towards *popularist science* is found where researchers rush to publish in order to provide some semblance of legitimacy for their work. The work may be published in journals that do not have articles carefully reviewed by other academics (known as 'peer review'). Claims may be made for the effectiveness of team-building procedures, for example, when little evidence has actually been found to support them. *Pedantic science* occurs where academics conduct research in areas that are likely to produce significant results, and therefore be published in good journals, but where the work conducted has little if any relevance for practitioners working in the field with clients. There may be a concentration on the replication of previous studies with slightly different participant groups, or on increasingly technical and statistical detail, appreciated only by small groups of similarly oriented experts. Finally, *puerile science* occurs where there is neither rigour in the method nor relevant application of the content. Anderson et al. claim that, thankfully, in their field of occupational psychology, most such studies are blocked by editorial boards (of journals) and that few clear examples exist. However, the growing pressures on university staff to increase their levels of publication, the existence of publications which the general public might take as more prestigious than is the case, and the tendency for the media to overdramatise 'scientific breakthroughs' make it necessary for applied psychologists to be alert to the quality of research published in their field.

Evidence-based practice

There have been developments which might help to ensure that Anderson et al.'s pragmatic science remains the priority in applied psychology. The most important of these is probably the emphasis given to what is termed *evidence-based practice.* Harper, Mulvey and Robinson (2003: 162) state that:

> Evidence based practice represents an approach to decision-making about the most effective intervention that is transparent and accountable. It focuses on the current best evidence about the effects of particular interventions in both the short and the longer term

The key terms here are 'effective', 'transparent' and 'accountable'. An applied psychologist wishing to implement some kind of programme to improve a situation in the health or educational arenas, for instance, will need to convince other professionals involved, and often the clients for whom it is intended, that the planned intervention is feasible. It will need to be obvious (*transparent*) to them, therefore, why it has been chosen, that it has some chance of succeeding and that it is not impractical, or even dangerous. Psychologists working in the public sector will need to convince managers that the programme is affordable and will produce results that are financially as well as humanly worthwhile. This is the issue of *accountability*, which has risen to prominence in public services since the last decades of the twentieth century; but psychologists working with or in private companies too will need to convince money managers that their planned projects are commercially viable.

In order to justify their planned interventions to those who will fund them or permit them to go ahead, psychologists need to be armed with evidence about *effectiveness*. This means, in a narrow sense, does the programme work? To answer this, it is necessary to gather together as much convincing evidence as possible that such schemes do work, how many they work for and under what circumstances. This burden of evidence is particularly acute where there are alternative interventions being proposed, perhaps by competing providers. Here, of course, we run into a dilemma. On the one hand, the scientific training

of psychologists will make them prefer the best intervention based on previous scientific evidence and an argument that the proposed programme is most likely to be effective in the given circumstances. These circumstances are often unique, so that the proposed action is something of an 'experiment'. On the other hand, commercial interests might lean towards a cheaper solution or a 'quick fix' (Briner 1998; Doyle 2003), which is an approach that looks good on the surface, is speedy and economical, and is therefore pleasing to finance managers. However, quick fixes are often hard to evaluate because of their short duration, and it is possible for all concerned to believe that they *must* have done some good, when in fact they are quite ineffective.

What is effective?

Harper et al. (2003) also raise the question of what counts as effectiveness? As far as narrow psychological research methods are concerned, this might be assessed simply in terms of: 'Is there a significant change in behaviour?' and 'Is this effect found consistently?' – the issues of *validity* and *reliability* respectively (see Chapter 11). However, effectiveness might also be assessed, for example, in terms of ethical appropriateness and client satisfaction. To take a crude and melodramatic example, it might be that smoking can be stopped, at least temporarily, by use of electric shocks, but is this ethical and is it in the client's best interests in the long term? A school's academic achievement might be raised by an intense training programme in subjects relevant to SATs (maths, science, English), but what is the effect on children of being deprived of other subjects?

INTERVENTIONS AND THEIR EVALUATION

We have mentioned the fact that applied psychologists carry out interventions and that these are rather like research projects, except that they are aimed primarily at human problem solution. They will also provide valuable research findings once they have been evaluated. Quite often psychologists are involved in an intervention only after it has been carried out; their role is the narrower, but vital one of evaluating the project's outcomes. When they are involved in the creation, implementation and management of an intervention, however, the following stages will commonly occur:

- contact with the client;
- assessment;
- diagnosis or formulation;
- design of the intervention programme;
- implementation of the intervention programme;
- evaluation.

Contact with the client (individual or organisation)

The client may come hesitantly to the psychologist, as when the clinical psychologist acts as therapist. The client may expect a service without question, as in the case of special needs assessment by an educational psychologist. The client might be a company consulting an occupational psychologist on a commercial basis. The psychologist may get involved as a member of a team (of health professionals tackling a public health awareness programme, for instance), through an aspect of their academic research, or because they are already employed by the organisation requiring an intervention.

Assessment

Having discussed and considered with the client(s) the general problem to be tackled, the applied psychologist will set about an initial assessment of the difficulties and issues. This may include:

- Discussion of the problem as seen by the client, and consideration of whether there really *is* a problem.
- Initial data collection through any of the methods outlined in Chapter 11(interviews, observation, psychological tests, etc.), in order to assess the current situation. This should be a relatively unbiased recording, for example of present levels of job satisfaction or all relevant behaviour patterns of a child with reported behaviour problems.
- Analysis of problematic behaviour or systems (for instance, comparison with normal levels of job satisfaction in an equivalent job context; a description of events which have triggered or preceded aggressive or destructive behaviour).

Diagnosis or formulation

It is at this point that the applied psychologist's background in scientific method, psychology and research becomes of crucial importance. Previous similar cases will be compared, and successful treatments or interventions analysed for their relevance to the present case. The *scientific* aspect of the scientist-practitioner model includes the application of a *model* (working theory or preferred approach) and the generation of hypotheses. Having formed such hypotheses, predictions might be made and initial tests of confirmation applied. For instance, the clinical or educational psychologist might predict the circumstances provoking violent behaviour and await the next outbreak for confirmation. The occupational psychologist might consider changes to the level of independence and control given to employees in their jobs, or to different kinds of incentive schemes.

Design of the intervention programme

Here is where the implications of the analysis already carried out are put into practical terms. The psychologist, other team members and the client (in most cases) draw up a specific course of action to be taken, which is intended to resolve a problem or improve a situation. It is very important at this stage to define exactly what will be counted as showing that the intervention 'worked'. This is done by specifying desired or expected *outcomes* – what it is hoped will be achieved. These *must* be *operationally defined* (see Chapter 11) so that the evaluation stage (see below) can provide clear and unambiguous evidence of improvement and therefore of the success of the intervention. For instance, 'aggression' reduction in a disturbed child might be specified as an 80 per cent drop in the child's hitting rate. Increased athlete motivation might be measured in a percentage of performances above the current average. Worker satisfaction might be measured by questionnaire or by increased positive statements made at weekly appraisal sessions.

Implementation of the intervention programme

Implementation may involve a lot of people in quite different roles. It will almost certainly involve consideration of a number of ethical and practical issues too detailed to discuss thoroughly here. However, some main features of this stage can be listed for reference and further thought. Here, the 'change-agent' is either the psychologist or a team of professionals implementing change; and the 'client group' is made up of those people who are the focus of intended change (e.g. a departmental workforce or some children whose behaviour is difficult to handle). In this sense, the 'client group' could be just one individual, as is often the case in clinical psychology.

Information and consent

The direct client might be an employer or representatives of a health trust, and if the client group is a number of employees or a group of patients, it is important that these people are fully consulted and informed at some stage. In some cases, the client group is too large for this to occur, as when a campaign is launched to increase the reporting of sexually transmitted diseases; but where there is a focused client group, ethical principles require their *informed consent.* It might be problematic, initially, to give *full* information on a project. For example, if a group of employees given a certain type of training know they are expected to do better than a control group, they might just do better anyway, motivated by the expectation. However, participants can be given general information about the project and their likely experience, and should be fully debriefed *after* the intervention is complete. There will also be an extent to which information can be made available to the client group as the project progresses, and this will also apply to other people working or associated with them, such as the family or care staff working with a child with severe learning difficulties.

Ethics

These decisions about information and consent bring in the general issue of research and professional ethics (the BPS *Code of Ethics and Conduct* was mentioned earlier). During the intervention, the applied psychologist needs to keep a check on the level of comfort experienced by participants with what is happening to them. It is not enough to say 'no one complained'. People often find it hard to complain. In some cases, a careful watch must be kept on the extent to which the intervention is resisted or rejected.

Confidentiality of any information gathered is extremely important. If not completely confidential, then where findings are published, participants need to remain anonymous. The psychologist may discover a personal conflict of interest, for instance, an employer's ulterior motive (perhaps to fire staff using intervention findings) may only be revealed when a programme is already under way, where the declared aim was to improve staff morale and efficiency.

Contracts

Partly to answer these ethical points, but also to ensure that all those involved are informed, committed and agreed, the change-agents and client group would usually draw up and agree contracts on all the important stages, terms and principles of the intervention.

Monitoring and feedback

A constant watch must be kept on progress. It must be agreed clearly, in advance, at what point certain aspects of the intervention will be brought to an end, or at what point new measures will be taken or new stages implemented. This depends very strongly on the agreed outcome measures.

Unexpected outcomes

As a result of close monitoring, any unexpected changes in client group behaviour or other outcome measures will need to be dealt with. Children's behaviour might unexpectedly deteriorate because of an unanticipated variable – they might 'rebel' against a scheme of withdrawing privileges, for instance. Workers may collectively slow down production in the presence of 'alien' observers. Appropriate and previously unplanned responses to these outcomes must be produced quickly, while remaining in the spirit of the original model on which the intervention is based.

Evaluation

At some point, a decision must be made about whether the intervention has achieved what it was meant to achieve. Did it work? How well did it work? If outcome measures were clearly specified at the start, these decisions will be much easier. Further very important questions remain. The answers to these serve as valuable means with which to increase general knowledge in the psychologist's area of expertise and to guide solutions to similar problems in the future:

- What were the overall *costs* and *benefits* of the intervention?
- Were particular individuals helped, and/or was the intervention beneficial to the whole client group?
- What implications are there for the *model* on which the intervention was based? Do we have further support or contradiction of the background theory? If the latter, how can further research help clarify any conflict in results?
- What was the particular value of the *psychological* aspects of this intervention?
- What is the next step for the client (group)? Should the intervention strategy continue? Is there another step with which to make progress?
- What *practical and ethical issues* have arisen from which learning has occurred? How will this be *transmitted* to other practitioners and agents of change (e.g. through a journal article)?

AREAS OF OVERLAP IN APPLIED PSYCHOLOGY WORK

As applied psychology increases in importance, as each specialism grows and expands to deal with an ever wider range of problems and issues, it is inevitable that previously distinct applied areas will begin to overlap. For instance, educational psychology was once pretty much confined to the testing and assessment of children in a mainstream educational context. Today, however, educational psychologists will be engaged in the 'statementing' of children with special educational needs. For a long time there has been cooperation with therapeutic services such as the Child Guidance Service. Though this kind of cooperation continues, some educational psychologists today will *themselves* be engaged in the creation, management and operation of therapy programmes with children who are difficult to manage in the school setting. Similarly, clinical psychologists might work inside hospitals alongside health psychologists. Occupational psychologists can be involved in counselling employees, or in health-related programmes such as the provision of stress-reduction programmes within a large company. Counselling psychologists can work with athletes. Forensic psychologists might be involved in prison

education programmes, or in what amounts to therapy with offenders, and so on.

THEORETICAL PERSPECTIVES IN APPLIED PSYCHOLOGY

A majority of research in psychology has been carried out within a framework of thinking provided by one of a few overarching schools of psychological thought. These are often known as 'approaches', 'perspectives' or, at times, just 'theories'. Some of the more prevalent of these are behaviourism, the psychoanalytic movement, humanism, the cognitive schools and the emphasis on physiological explanations of human behaviour.

The reader who has tackled no psychology at all before reading this book might like to consult a general textbook in order to become familiar with the major schools of thought in the history of psychology's 100 years or so of development as a theoretical and scientific research discipline. A full description of each perspective is not possible here, but, as with research methods, to appreciate the general outline of the approaches, and to refresh those psychology students who do not wish to consult old notes or other texts (and to save our authors repeating themselves in each chapter!), we have provided a brief outline of major approaches and general theoretical issues in psychology in Chapter 10.