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Review Article

Behaviour Therapy: Recent Trends and Current Practice

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To psychiatrists who entered clinical practice in the decade 1955–65, 'behaviour therapy' probably conjures up the names of Eysenck, Lazarus and Wolpe; the invocation of learned maladaptive anxiety as the basis of most neurotic illness; desensitization by graduated exposure in imagination and real life to anxiety evoking situations. Neurotic 'symptoms' were maladaptive habits and the 'symptoms' were the disease, not merely outward manifestations of underlying disorder. Eysenck (1959) described behaviour therapy as all methods of treatment which were based on 'modern learning theory'. The 'bell and pad' treatment for enuresis and aversion therapy for alcoholism were appropriated and refined. Operant conditioning crossed the Atlantic and the application of Skinnerian principles was illustrated by Krasner and Ullman (1965). In the early sixties, at the very least behaviour therapy offered a possible treatment for a small proportion of psychiatric patients, for example those with phobias, tics or alcoholism, a group for whom other treatments were of little value.

The next five years witnessed a rapid expansion and consolidation in behaviour therapy. It provided theoretical formulations concerning both the pathogenesis and treatment of some psychiatric disorders. By 1970, some of its original over-aggressive and strident condemnation of other 'schools' of psychiatric treatment had diminished and some major texts concerning theory, methods and efficacy had appeared (e.g. Bandura, 1969; Franks, 1969; Kanfer and Phillips, 1970). Productive interchange between behaviour therapists, whether clinical psychologists or psychiatrists, more than counterbalanced the degree of fragmentation and occasional personal animosities amongst behaviour therapists which seem an inevitable stage in the development of a new field of knowledge. Experimental psychology was perceived as being of possible relevance to the understanding and treatment of psychiatric disorder and some behaviour therapy had an established place in psychiatric treatment.

An appraisal of its methods and applicability in psychiatry together with a comprehensive literature review can be found in Meyer and Chesser (1970).

The present review will focus on trends that have developed in the last five years and attempt a description and appraisal of its present contribution to psychiatric practice. There has been a vast increase in the behaviour therapy literature in recent years and it would be impossible to provide an exhaustive review. There are many general textbooks, texts on specific topics, an *Annual Review of Behaviour Therapy*, at least four journals exclusively devoted to behaviour therapy and an increasing number of articles appearing in journals of psychiatry and psychology. Therefore, of necessity, this will be a selective review, reflecting personal interests stemming from the practice of adult hospital psychiatry.

Nomenclature

There is no agreed definition of behaviour therapy or agreement as to its name. 'Behaviour Modification' tends to be associated with operant conditioning methods. 'Contingency Management' is similarly restricted in meaning. 'Behaviour Control' and 'Behavioural Engineering' carry negative connotations of coercion, while 'Behaviour Therapy' is associated with a medical setting and could exclude educational, institutional and community settings.

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'Behavioural Psychotherapy' emphasizes it is within the realm of psychological treatment, but has the added disadvantage that for some people psychotherapy is equated with psychoanalytic psychotherapy. 'Behaviour Therapy' is probably the term in most common usage.

Definitions of Behaviour Therapy

All definitions would state the production of beneficial change in behaviour as the goal. They vary in the extent to which the methods may be based exclusively on operant conditioning, learning principles, experimental psychology, or behavioural sciences in general. To some it denotes a collection of techniques (e.g. Lazarus, 1973), while to others it describes an approach to the conceptualization, analysis and formulation of treatment of psychological disorder (e.g. *BABP Bulletin*, 1975; Meyer and Liddell, 1975). Yates has argued strongly that the term should be restricted exclusively to the experimental study of the single case employing the hypotheses and procedures of experimental psychology. He also provides a good discussion about the place of theory, technology and methodology in behaviour therapy (Yates, 1975).

Features of the Behavioural Approach

Some of the main characteristics of current behaviour therapy are as follows. Most are a matter of emphasis rather than absolute.

(1) It focuses on maladaptive behaviour rather than some assumed disease process, impaired personality structure, or unconscious conflict. There is a preference for observable and measurable aspects of behaviour such as phobic avoidance, compulsive handwashing, or increase in heart rate. A majority of therapists will also be prepared to pay attention to cognitive processes, imagery, and subjective affect when they are relevant to the analysis or modification of 'symptoms'. However, operational definitions of these internal events would be used. Patients' verbal reports, self-rating scales, or autonomic responses might often be used.

(2) The focus on observable behaviour and operational definitions is an essential prerequisite for the experimental approach. Behaviour therapists wish to be able to test the concepts they employ. Research and treatment are closely interlinked. The treatment of an individual's problem behaviour is an exercise in the experimental manipulation of variables which would lead to modification of the unwanted behaviour—the dependent variable. Not only is there an eagerness to subject treatment techniques to empirical testing, but also the experimentalist within each therapist will be itching to ascertain whether a particular procedure was really responsible for any observed behaviour change. He wishes to put his hypotheses about the genesis and maintenance of symptoms to the test in the individual patient. The approach is likely to be a direct one, with emphasis (but not always exclusively) on the here and now, tailored to the individual patient.

(3) Treatment goals are likely to be defined specifically, after frank discussion and negotiation with the patient and often his family. It is this degree of explicitness combined with the sometimes dramatic efficacy of treatment which necessitates the most painstaking clarification of the patient's objectives in seeking treatment and its possible consequences for the patient, his family and his social environment. One does not have to espouse the concepts of unresolved underlying conflicts and 'symptom substitution' to be aware that successful slimming or improvement in orgasmic adequacy or agoraphobia could affect a marital relationship, changing, improving or disrupting it. Specification of 'target behaviours' to be modified and what they should be replaced by should be determined by discussion of the behavioural analysis with the patient. The next step will be the establishment of suitable measuring techniques (if not already done during the behavioural analysis) so that a pre-treatment baseline is obtained and subsequent progress monitored in relationship to treatment procedures employed and other organismic or environmental changes. The feedback provided from this may allow hypotheses about the maintenance and modification of symptoms to be tested and influence subsequent management. In addition the mere provision of feedback may be of therapeutic value, as well as being essential for operant conditioning programmes.

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Some Theoretical Issues

There is no necessary relationship between the efficacy of a particular treatment and the aetiology of the disorder. The fact that particular behaviour can be modified by learning processes does not automatically imply that it was initially acquired by ordinary learning processes. Neurotic symptoms do not have to be learned maladaptive habits if they are to be amenable to behaviour therapy. Some maladaptive behaviour is clearly the result of genetic endowment or organic lesions but it may still be susceptible to modification by learning processes. For example, the management of mental subnormality depends on such an assumption. However, while most severe subnormality and dementias are associated with cerebral disease, and many behaviour therapists would accept that organic disease could be a causal factor in some psychoses, personality disorders and neuroses, they might feel ill at ease with this conceptual framework of 'the medical model' with patients, symptoms, disease entities, medical diagnosis, prognosis, and a qualititative distinction between normal and abnormal. This stems from their bias not only towards employing learning principles in treatment but their desire to ascertain the maximum extent to which the appearance of 'symptoms' can be accounted for by ordinary learning. They may be more at ease with 'clients', 'behaviour problems', 'behavioural analysis', 'behaviour modification'. Some of the differences between this framework and the 'medical model' are purely semantic, some represent a different conceptual framework. Only a proportion represent differences which could be put to experimental test.

Although behaviour therapists can acknowledge the potential influence of genetic endowment and structural lesions, most favour an idiographic approach reminiscent of psychoanalysts. To some labelling seems irrelevant, and subjects cannot be grouped together for outcome studies. The basis of one person's 'agoraphobia' may be entirely different to another person's. This approach is perhaps most characteristic of Skinnerian operant conditioning where the impact of intervention in one individual at a particular point in time is the central interest. However, while progress has been made in the methodology of the single case study (Leitenberg, 1973), many therapists and probably most psychiatrists would agree with Paul (1969) that a factorial group design is essential to demonstrate causal relationships with confidence. Implicit in this view is the possible relevance to outcome of 'symptom' variables within the domain of 'patient' variables. The grouping of patients according to symptoms may correlate with response to a particular treatment.

The concept of 'personality' in behaviour therapy is a confusing one. Eysenck, very closely associated with the development and promotion of behaviour therapy, is also a personality theorist, defining personality as the sum total of actual or potential behaviour patterns of the person, as determined by heredity and environment. For Eysenck, the dimensions of personality and their neurophysiological foundation are an important variable in determining behaviour. But the general thrust of other workers is typified by asserting 'the death of personality'.

Mischel (1968) has been influential in emphasizing the greater importance of situational than personality factors in determining actual behaviour. Not surprisingly, no consensus has yet emerged. In a recent paper, Bowers (1973), reviewing eleven published studies, calculated that situational factors accounted for 10 per cent of the variance, personality factors 13 per cent, while situation-personality interaction accounted for 21 per cent. This may be a more congenial finding for many clinicians. But while individual differences are a fact of life and 'personality variables' may be relevant, the behaviour therapist's prime interest will be the observation, measurement and modification of behaviour in defined situations.

'Unconscious conflict', like 'symptom substitution', is a concept which cannot be handled by behaviour therapists. The difficulty presented by the psychodynamic 'unconscious' is recognized by Crown, for instance, who argues the advantages of psychotherapists adopting an operational definition of non-conscious as unawareness and discarding 'unconscious'

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(Crown, 1975). It may still need emphasizing, however, that virtually all behaviour therapists accept the central role that conflict can play in the development of experimental neuroses, behaviour disturbance, anxiety responses and some 'psychosomatic' lesions. Conflict has aversive qualities. But it is still accepted, as Wolpe was at pains to demonstrate (1958), that conflict is not a necessary cause of 'neurotic anxiety reactions' and that traumatic conditioning can be a sufficient cause. In the clinic, however, many neurotic disorders, particularly agoraphobia, are thought to be based on conflict (e.g. Wolpe, 1973).

'Symptom substitution' cannot be observed by behaviour therapists because their framework does not include 'symptoms', 'symptomatic treatment' or 'underlying neurosis'. This is a theoretical point. In operational terms, it is quite difficult to define what should be labelled 'symptom substitution' (e.g. Cahoon, 1968; Crisp, 1966). But the empirical findings are that symptom substitution is not a special hazard of behaviour therapy. It occurs no more frequently after behaviour therapy than after other forms of treatment. However, behaviour therapists could predict the emergence of new avoidance responses after the successful elimination of the patient's original one if anxiety is still evoked by a stimulus in the patient's environment. For some therapists, 'anxiety' is an unnecessary inference, and they would refer to aversive rather than anxiety-evoking stimuli. Similarly, it cannot be assumed that removal of a maladaptive habit could not be replaced by another maladaptive one rather than an adaptive one. Learning as well as unlearning may be required.

The role of cognition in behaviour therapy is controversial to many. It has already been said that thought processes and imagery are used (e.g. Cautela, 1973) as also are therapeutic instructions and modification of 'self-talk'. It has long been a slogan that behaviour therapists 'should pay more attention to cognition and mediational variables'. They do (Mahoney, 1974). Some would include 'cognitive therapies' such as Beck's (1970), or Ellis' Ration-Emotive Therapy under the rubric of Behaviour Therapy. But while not excluding cognitive factors in behavioural methods of treatment, the theoretical relationship between cognitions and behaviour remains controversial. While some would continue with Skinner to adopt a non-mediational model and consider awareness to be the result of behaviour change, others espouse one of the three possible alternative models of the relationship between awareness and behaviour; that they are independent; that awareness is a prerequisite for learning; that awareness can be both a result or a condition for behaviour change (Bandura, 1969).

At this stage, one could summarize the behavioural approach by saying it is wide based, grounded in experimental psychology principles, ready to take cognizance of organismic variables, individual differences, organic pathology, the developmental history of the patient, the factors initiating and maintaining undesired behaviour, the existing behavioural repertoire of the patient (potential assets), and the social environment of the patient. It is easy to understand that this will come as a surprise to those whose sole contact with the behaviour therapy literature has consisted of descriptions of the operant conditioning in a single case of enuresis or a comparison of desensitization and flooding in phobics. The best way to illustrate the present situation in clinical work is to describe the behavioural analysis.

Diagnostic Assessment—Behavioural Analysis

Many agree that the assessment and analysis are the most crucial aspect of the behaviour therapist's work. It has often received scant attention. Few guidelines are available about how to conduct a clinical interview. Observation of behaviour and behavioural tests are rightly emphasized and distinguish the behavioural from the more psychodynamic approach where more emphasis is placed on subjective experience and behaviour within the interview situation only. An early assumption in the clinical application of behaviour therapy was that the problem behaviour was obvious, easily discernable, and would lead to immediate selection of a treatment technique. A phobia would predict desensitization, alcoholism aversion therapy, a tic massed practice, enuresis

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'bell and pad'. However, enough has already been said to demonstrate how simplistic this early approach was. One of the main applications of the behavioural approach is in the analysis of problem behaviour and an understanding of its development in terms of its initiating and maintaining variables.

The therapist needs to elicit a full description of the presenting complaints and details of personal history which might include painful or embarrassing material about which the patient may be naturally reticent. Therefore the therapist's own behaviour and the relationship that develops is important. He needs to encourage the patient to give this information —he needs to be an effective 'social reinforcer' for the patient. Warmth, concern, demonstrable responsiveness to the patient will usually be the most effective behaviour. However, even quite early on, the therapist may wish to become more discriminating in selecting which kinds of the patient's behaviour he will reinforce. In style of approach, the behaviour therapist will be warm and 'human'. As Lazarus (1971) has illustrated, the therapist will be asking himself 'what' and 'when' rather than 'why' when he is clarifying the present complaint.

Kanfer and Saslow (1969) were among the earliest to offer guidelines for assessment of patients based on a 'A Functional (Behavioural-Analytic) Approach.' Their headings are worth quoting to illustrate the breadth of the analysis.

1. A detailed description of the particular behavioural excesses or deficits which represent the complaints, and of the behavioural assets which may be available for utilization in a treatment programme.

2. A clarification of the problem situation in which the variables are sought that maintain the problem behaviours. Attention is also given to the consequences of psychiatric intervention on the current adjustment balance of the patient in his social environment.

3. A motivational analysis which attempts to survey the various incentives and aversive conditions representing the dominant motivational factors in the patient.

4. A developmental analysis, considering biological, sociological and behavioural changes.

5. An analysis of self control, which provides an assessment of his capacity for participation in treatment.

6. An analysis of social relationships to assess social resources which can help or hinder treatment.

7. Analysis of the social-cultural-physical environment.

Such an analysis may be difficult and incomplete. It is meant to be 'action orientated' as its purpose is the definition of the patient's problem in a way which will suggest specific behaviours for modification and specific treatment procedures. Kanfer and Saslow also emphasize that it may lead to a decision not to treat. A conscientious behaviour therapist in clinical practice will not be 'trigger happy', either in the sense of being prepared to treat anyone, or everyone with a specific type of behaviour such as excessive drinking, or automatically to use a particular treatment technique for a given type of behaviour.

Behavioural analysis is therefore a formidable undertaking. It overlaps considerably with traditional psychiatric history taking, observation of the patient within the interview, obtaining information from informants, and observation of behaviour outside the interview setting. However, it has a theoretical bias. It is searching for stimulus-response patterns, their antecedents, consequences and subsequent consequences. Chaining of responses is relevant, particularly in the analysis of problems such as smoking and marital friction when it may be necessary to examine either a shorter or longer period of time in which the undesired behaviour occurs. Single and multiple traumatic experiences which may have lead to conditioning are searched for, together with evidence for response generalization, symbolic generalization, and higher order conditioning. Positive and negative reinforcers operating at the onset of a particular behaviour problem are looked for, together with operant reinforcers that may be maintaining the behaviour ('secondary gains').

Although it is clear that treatment is formulated on the basis of historical data as well as the current situation, different therapists vary

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in the weight they attach to them. Wolpe (1973) states that the historical information at the very least gives a perspective on the case, but may also provide important clues to currently relevant stimulus-response relationships. Meyer, in his writings, has given further emphasis to the analysis of the family background and past history of the patient, both as a means of establishing specific anxiety evoking stimuli in a phobic situation—for example fear of criticism in an 'agoraphobic' who had exacting and critical parents—and also to obtain some understanding of the patient's aspirations and self-reinforcement systems which can be utilized in treatment (e.g. Meyer, 1975a).

At the initial completion of assessment (it remains an ongoing process which continues throughout treatment), patients and therapist must come to agreement on whether to embark on treatment, what to treat, and how to treat it. Relevant organic pathology and treatment, environmental manipulation or acceptance of present behaviour are possible outcomes. When target behaviours to modify have been identified, what should they be replaced by? In the analysis of patients' problem behaviour, Skinnerians might categorize it purely as excesses or deficits, whereas those who are influenced by Wolpe and make considerable use of counter-conditioning techniques will utilize the concept of anxiety and identify the presence of anxiety responses, whether cognitive, autonomic or motor.

Behavioural Treatment Procedures

Reduction of anxiety. Wolpe (1958) described the treatment package of systematic desensitization in imagination which involved training in muscular relaxation, construction of graded hierarchies of anxiety-evoking stimuli, and then the systematic presentation of the hierarchy items while the subject was relaxed until the top item no longer evoked subjective anxiety. Early difficulties encountered were patients who could not relax adequately, those who could not imagine adequately, and those who could imagine but did not report any accompanying subjective experience of anxiety. Most therapists have reported some success with systematic desensitization. However, there have been important developments both in the theoretical understanding of systematic desensitization and its use as a treatment procedure for anxiety responses. Although systematic desensitization at a procedural level appeared to be an example of counterconditioning, Wolpe put forward a neurophysiological concept of reciprocal inhibition to account for its efficacy, and stressed the importance of adhering strictly to all the ingredients of the treatment procedure.

However, it has now been shown both in volunteers and clinical patients with phobias that muscular relaxation is not always necessary (e.g. Cooke, 1968; Agras *et al*, 1971; Benjamin *et al*, 1972), and that hierarchy items do not necessarily have to be presented in graded order (e.g. McGlynn *et al*, 1970; Krapfl and Nawas, 1970). The finding that group treatment with the same hierarchy for all subjects can be as effective as individual treatment with tailor-made hierarchies provides another source of indirect evidence that carefully graded hierarchies may not always be necessary (McGlynn, 1971). Yates (1975) concludes that 'each and every one of the components of systematic desensitization has been shown to be neither necessary nor sufficient—like the Cheshire cat left with only its smile, systematic desensitization seems to work . . .'.

Muscular relaxation does appear to be associated with a reduction in autonomic responses (e.g. Lader and Matthews, 1970). Theoretical discussion has considered whether systematic desensitization is best explained in terms of an extinction model, or an habituation model (e.g. Lader and Matthews, 1968; Van Egeren, 1970, 1971; Van Egeren *et al*, 1971). Cognitive factors have been examined by experimental manipulation of expectancy, therapeutic instructions and false biofeedback. There are no clear conclusions to be drawn, and the supremacy of cognitive factors has not been established. (The reader interested in this specialist area is referred to Wilkins, 1971; Davison and Wilson, 1972, 1973; Lipsedge, 1973; Marks, 1975; Meyer, 1975a; Yates, 1975.)

Flooding: Returning to clinical application, there have been important developments in the procedures adopted to diminish anxiety responses and avoidance behaviour. In flooding,

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subjects are exposed to their anxiety-evoking situations and instructed not to escape. The term was first used by Polin (1959) and Malleson (1959) described the treatment of examination panic by flooding. In 'Implosive Therapy', Stampfl and his colleagues described imaginal flooding with graded anxiety cues including 'psychodynamic themes' such as castration and oral impregnation. The techniques involve the evocation of maximal anxiety and its reduction is assumed to be due to experimental extinction. By now, the research literature is as conflicting with regard to flooding as it is with systematic desensitization (Morganstern, 1973). Meyer (1975a) states that of six studies comparing desensitization with flooding, three showed no difference in their efficacy, two favoured desensitization and one flooding. In this last study, Marks and his colleagues (Marks *et al*, 1971) suggested that flooding was superior to desensitization in the treatment of agoraphobia and in the most anxious patients. However, also using a clinic population, Gelder and his colleagues (1973) could not replicate this. They found desensitization and flooding had very similar effects. Hussain (1971) actually reports a reverse finding to that of Marks. High anxiety in agoraphobics predicted a poor response to flooding.

Modelling (imitation): Bandura (1969) has emphasized the importance of social learning in real life and has described treatment procedures for phobic behaviour which employ modelling. Modelling followed by the subjects' active participation seems the most effective. It is often employed in practical retraining or *'in vivo'* treatments, when the therapist demonstrates the appropriate approach behaviour and encourages the patient to follow. However, as Marzillier (1975) comments, there has been surprisingly little systematic study of modelling in clinical treatments.

In the treatment of phobic behaviour one can place current treatment procedures along certain dimensions. At one end would lie systematic desensitization in imagination involving gradual exposure and minimal anxiety arousal, and at the other end would be implosion with prolonged exposure immediately to very threatening (and unrealistic) anxiety stimuli with maximal evocation of anxiety. Some of the relevant parameters are imaginal or real life exposure, gradual or sudden exposure, minimal or maximal anxiety arousal, use of muscular relaxation, emotive imagery, drugs, hypnosis, anxiety management (Suinn and Richardson, 1971), coping skills, biofeedback training, modelling, individual or group treatment. Marks (1975) argues persuasively that the achievement of prolonged exposure in real life situations is the basis of successful treatment outcome.

Exposure *in vivo* by a group of phobic patients with a therapist encouraging group cohesion and support can lead to significant improvement in the phobia and also some improvement in interpersonal adjustment. Group treatment was not less effective than individual treatment in improving phobic behaviour (Hand *et al*, 1974; Hafner and Marks, 1976).

Aversion techniques: Although there is some evidence of efficacy, aversion therapy is not in common usage. It is rarely employed as the sole treatment technique and is usually used at the active request of the patient. This is not only because of ethical considerations but also because elimination of a 'maladaptive response' is only going to be worthwhile if it is replaced by more adaptive responses. If these are not already in the patient's repertoire of behaviour, the main focus of therapy will be the establishment of adaptive responses. Similarly if the maladaptive behaviour is part of an anxiety response, the anxiety should be treated first. The theoretical basis of aversion therapy is unclear. In a classical conditioning paradigm the aversive stimulus is presented in the presence of the stimulus that elicits the undesired behaviour and a conditioned anxiety response should be established. There is little empirical evidence that this occurs (Hallam *et al*, 1972). Punishment training requires the presentation of the aversive stimulus contingent upon the performance of the undesired response. Escape and traumatic avoidance learning procedures may also be used.

Apart from a more restricted use of aversion therapy, the use of electric shock rather than drugs as the preferred aversive stimulus because

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of greater precision in manipulation and less dangerous side-effects, a further development has been the use of imaginal aversive consequences—a procedure termed 'covert sensitization' by Cautela (1967). The patient is trained to imagine some aversive scene—often one that is a possible consequence of the problem behaviour, and also to imagine the situations in which the behaviour occurs and the actual behaviour. With these three imaginal components, classical conditioning, punishment, escape and avoidance learning are theoretically possible, and could be followed by covert or overt positive reinforcement.

Token economies: Good descriptions of token economy programmes in psychiatric hospitals are given by Ayllon and Azrin (1968) and Schaefer and Martin (1969). There is good evidence that token economies can increase contingently reinforced behaviours in psychiatric in-patients (Carlson *et al*, 1972). Experience with token economy systems in English psychiatric hospitals are given by Baker *et al* (1974), and Mumford *et al* (1975). Hall and Baker (1973) emphasize that there has been quite a high breakdown rate in token economy projects (eight out of thirty-five in an American survey). The active preparation and good will of administrative, medical and nursing staff are required. Programmes can easily be sabotaged by rapid turnover of ward staff and the deliberate or accidental provision of non-contingent reinforcement.

The maintenance of desired behaviours after the patient leaves the token economy (generalization to the patient's own environment) has been a major problem. Attempts to sustain improvement have been made by gradually replacing tokens with social reinforcement from other patients and staff, delaying the exchange of tokens for the back-up reinforcers, using intermittent reinforcement to increase resistance to extinction. More directly, attempts have been made to 'reprogramme' the patient's social environment, so that relatives and friends reinforce target behaviours and reinforcers are shared between the patient and others in his social group (e.g. Jones and Kazdin, 1975).

Apart from the difficulties in obtaining and maintaining efficient staff participation, there can be difficulties in motivating the patient initially and maintaining the motivation (Atthowe, 1973). Allen and Magaro (1971) reported that 41 per cent of patients never responded to a token economy. Hall and Baker (1973) discuss the selection of patients and target behaviours. There is evidence that some psychotic symptoms are much less easily modified than social behaviours. Atthowe (1973) recommends individualized token programmes, allowing the patient to 'sample the reinforcer'. Winkler (1971) has considered the relevance of economic theory to token economies. Income must equal or exceed output. When prices are low, patients spend more and are more active. If prices are increased, some patients will hoard tokens. When savings become high, inactivity may ensue. Performance seems better when savings are low, so it may be helpful to have a time limit for tokens to be exchanged and to be able to introduce new back-up reinforcers.

Developments in token economy application have encouraged the prevention of institutionalization, the maximizing of the therapeutic potential of staff-patient and patient-patient interaction, and the scrutiny of the patient's home environment so that he can be better prepared for discharge, and attempts to modify unhelpful aspects of his family and social life can begin while he is still in hospital.

Behavioural Approach to Particular Disorders

'*Agoraphobia*'

This label describes the most frequently occurring disorder in which phobic anxiety is the most prominent feature. Clinical descriptions in the literature, whether from classical psychiatry, psychoanalysis or behaviourally orientated sources are remarkably similar. The clinical features are well described by Marks (1969). Despite the degree of consistency with which certain features cluster and therefore merit the designation of a syndrome, it appears to be a heterogeneous disorder in terms of causation and response to treatment. Although statistically and clinically significant improvement has been obtained by applying standardized behaviour therapy procedures in

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comparison to other or no treatment, a proportion of patients require further treatment or have other difficulties, such as a marital problem, which demand attention. The behavioural analysis of one agoraphobic might suggest it is an isolated phobia of fast moving traffic due to traumatic conditioning when involved in a road accident. If the phobic response is predominantly avoidance of fast roads, prolonged exposure *in vivo* might be the only treatment required, whereas if high autonomic arousal, for example tachycardia, is a prominent feature, muscular relaxation, or biofeedback control of heart rate together with imaginal and *in vivo* desensitization might be more appropriate. More commonly, however, agoraphobia appears to be related to more complex fears—fear of failure, fear of criticism, or social anxieties. Training in appropriate self assertion, social skills, increasing self esteem and desensitization of the fear of criticism may be the appropriate treatment measures. In some agoraphobics, positive reinforcement by spouse, relatives or friends may be a crucial maintaining factor whether or not it was an important initiating factor. In such cases, marital or family intervention aimed at altering the contingencies of reinforcement might be indicated.

Often there are several obvious problem areas apart from the agoraphobia, and it may be difficult to decide if and how they may be related. This illustrates the experimental nature of treatment interventions. The patient and therapist jointly select the treatment approach which is simple and will quickly reveal whether it will be effective. If little or no progress is made, then another approach can be tried.

Depression

Depression remains perhaps the most exciting topic in psychiatry. It is not often that such a common and everyday clinical condition sustains the focus of theoretical and therapeutic interest. Geneticists, neurophysiologists, biochemists, pharmacologists, 'descriptive psychiatrists', existentialists, psychoanalysts, neo-Freudians, cognitive therapists and sociologists have now been joined by experimental psychologists and behaviour therapists. A good recent review with an attempt at some synthesis is provided by Akiskal and McKinney (1975).

There has been an upsurge of interest by behaviourists in the aetiology of depressive states in the last six or seven years. Prior to this, it seemed very difficult to account for such a drastic reduction in operant behaviour unless there was a total absence of reinforcers or extensive suppression by punishment (Meyer and Chesser, 1970).

Ferster (1973) and Moss and Boren (1972) have reviewed the theoretical situations in which a person's level of activity might be reduced. Insufficient positive reinforcement could result from a paucity of adequate reinforcers in the environment, too much effort required to get them, the temporary or permanent loss of a powerful reinforcer through separation or bereavement, or removal of a powerful terminal reinforcer which had been maintaining a chain of behaviour (for example stopping studying for 'O' levels if you can no longer afford to study medicine subsequently). Certainly, depressive states commonly occur following life events of an 'exit character' (Brown *et al*, 1973; Paykel *et al*, 1969). Lazarus (1968, 1972) and Liberman and Raskin (1972) emphasize the loss of reinforcers, that would follow such life events. Costello (1972) places emphasis also on the loss of eliciting and discriminative stimulus properties resulting from separation or bereavement and the interruption of chains of reinforcement. He considers the patient has lost the taste for reinforcement.

Lewinsohn and his associates (e.g. Libet and Lewinsohn, 1973; MacPhillamy and Lewinsohn, 1975; Lewinsohn, 1974) in a series of studies on the analysis and treatment of depression, suggest that a low rate of response-contingent positive reinforcement acts as an unconditioned (eliciting) stimulus for some depressive behaviours such as dysphoria and serves as a sufficient explanation for the low rate of behaviour of the depressive. While recognizing that environmental changes can reduce response-contingent reinforcement, he also suggests that lack of social skills may be a very significant factor. The depressive may be bad at establishing rewarding social interactions, bad at avoiding unpleasant experiences, and eventually find

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himself having to settle for the more meagre and restrictive reinforcement he obtains from his 'depressive behaviour' (sick role).

Apart from insufficient positive reinforcement, punishment could be another cause of depressive behaviour. For example, Wolpe (1973) considers that severe and prolonged anxiety is a frequent cause of neurotic depression. Another example cited is powerlessness in interpersonal relationships resulting from conditioned anxiety inhibiting appropriate self assertiveness. This relates to the extremely important series of experiments and formulation of 'learned helplessness' by Seligman (1975).

The basic experimental finding was that a majority of dogs pretreated with inescapable shocks were unable to learn to escape from shock even after many trials in escape conditioning. In exploring this further, it appeared that inescapable shock usually caused a motivational deficit, a learning deficit, and a heightening of emotionality. This 'learned helplessness' in which the dog experiences that shock occurs independently of his own responding can be quite prolonged in duration and generalize to other situations with aversive stimuli. Reactive depression bears many similarities to learned helplessness, and it is sobering to consider that the only effective treatment for the dogs was forcibly dragging them to the safe side of the shuttle box up to 200 times. A point of similarity between learned helplessness and Lewinsohn's formulation is uncontrollability. Lewinsohn suggests that response contingent reinforcement is necessary to prevent depression, non-contingent reinforcers are ineffective.

A further possible example of learned helplessness—unavoidable aversive consequences—would occur in people with very high aspirations and the likely discrepancy between their achievement and aspiration. This kind of problem is postulated as a basis for depression by some neo-Freudians, cognitive therapists and behaviourists (e.g. Akiskal and McKinney, 1975; Bandura, 1969).

From what has been said about the behavioural analysis of patients with depression, it will be obvious that there is no single behaviour therapy technique applicable to all 'depressives'.

The general goal will be to increase the patient's control of aversive consequences. This could involve environmental manipulation, marital or family therapy to modify reinforcement contingencies, the elimination of avoidance behaviour by counterconditioning methods, the setting of graduated tasks which are reinforced (e.g. Burgess, 1968; Rush *et al*, 1975) increasing reinforced activities (Lewinsohn and Graf, 1973), increasing rate of speech (Robinson and Lewinsohn, 1973), assertive training (Lazarus, 1971; Wolpe, 1973), social skills training by modelling, feedback, role playing, and behavioural rehearsal (e.g. Argyle *et al*, 1974).

Obsessive-compulsive disorders

Obsessive-compulsive disorders, although assumed to be mediated by anxiety, rarely responded to systematic desensitization. Meyer (1966) described a therapeutic programme with two patients with compulsive rituals in which prolonged exposure to the stimuli which evoked their compulsions was combined with prevention of the ritual response. Initially described in cognitive terms, it is probably an extinction procedure. Meyer and his colleagues at the Middlesex Hospital have now treated a large series of patients with prominent compulsions by exposure *in vivo* and response prevention. Early results are reported by Levy and Meyer (1971) and Meyer, Levy and Schnurer (1974). Usually treatment is carried out both in hospital and at home. Group in-patient treatment was attempted but proved difficult. An example of brief and highly successful treatment conducted entirely at home is reported by Meyer *et al* (1975). A comparative trial of one hour and continuous supervision of patients has not yet been fully analysed, but preliminary results suggest that continuous supervision may achieve better short-term results but these are not always maintained at follow up (Robertson *et al*, 1976).

Following a rather similar approach, a Maudsley Hospital team have been treating compulsive disorders by various kinds of *in vivo* exposure with self-imposed response prevention. A two-year follow-up (Marks *et al*, 1975) revealed that 14 out of 20 patients were much improved in regard to rituals. A three-week control treatment of muscular relaxation had no significant effect on rituals. Therapist

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modelling added no significant advantage and there was no difference in outcome between gradual or rapid exposure.

Rather similar outcome with response prevention has also been reported in Australia by Catts and McConaghy (1975). It seems safe to conclude that *in vivo* exposure with response prevention (either self-imposed or supervised) can be a very effective method of treating chronic compulsive rituals and is a treatment of first choice. However, booster treatment may be necessary, other symptoms such as depression, phobias, anxiety, and marital problems require separate consideration, and their continuing presence seems to be a factor in the relapse of some patients.

Obsessional thoughts and ruminations not associated with motor or verbal rituals are more difficult to treat. A wide range of behavioural techniques have been employed, such as flooding, aversion relief, thought stopping, aversion, covert sensitization and reinforcement (e.g. Cautela, 1969; Stern *et al*, 1973; Solyom, 1971; Hackman and McLean, 1975).

Sexual dysfunction

Premature ejaculation, erectile impotence, delayed ejaculation, orgasmic dysfunction and non-consummation of marriage are quite commonly referred for behaviour therapy. As always, careful individual assessment of the individual patient is required. Ignorance, negative attitudes, poor technique, lack of attraction to partner, poor communication with partner, the presence of alternative and more preferred sexual outlets, may all contribute to the presenting complaint. However, anxiety is often a factor and a careful behavioural analysis is required. In the earlier behaviour therapy literature, premature ejaculation and erectile impotence were treated by systematic desensitization in imagination using muscular relaxation (Wolpe and Lazarus, 1966), practical retraining using sexual arousal as the counterconditioning response (Wolpe, 1958), desensitization with methohexitone induced relaxation (Friedman, 1968). Similarly, orgasmic dysfunction has been treated by systematic desensitization (Lazarus, 1963), and with methohexitone desensitization (Brady, 1966). An important advance in the behavioural treatment of sexual inadequacy by Masters and Johnson (1970) fits well into a social learning or behavioural approach. Improvement in communication, ventilation and resolution of resentments and joint responsibility for progress are established first. 'Sensate focus', the pleasuring—the 'giving to get' is the next phase of treatment. An increase both in sensual responsiveness and effectiveness of sexual stimulation can occur, while a prohibition on intercourse or any genital or breast contact may prevent the inhibitory effect of performance anxiety. Refinements include positive conditioning by means of masturbatory training to increase sexual arousal and conditioning it to fantasy one's partner. Positive conditioning techniques have been described by Asirdas and Beech (1975). Lobitz and Lopiccolo (1972) describe innovations employed in the Oregon Sex Research Programme, while Crowe (1976) reports a behavioural approach used in England. Most therapists employ Masters and Johnson modification of Seman's technique (the 'squeeze') for premature ejaculation, while vaginal dilators are often employed for severe vaginismus.

Undesired sexual behaviour

'Deviant' sexual arousal, if it was to be treated at all, at one time would have been an indication for aversion therapy. However, individual assessment of every patient is a necessity. Aversion therapy is now used infrequently, particularly as the sole treatment (Bancroft, 1974), and the behaviour has to be studied in the context of other sexual and interpersonal functioning. Deviant sexual arousal can be reduced by aversive conditioning. Electric shock aversion (Feldman and MacCullock, 1971), chemical aversion (McConaghy, 1969) and covert sensitization (Barlow *et al*, 1972) have been effective in reducing homosexual behaviour, but overall results are disappointing.

Successful electric aversion of transvestism (but not transsexualism) has been reported by Gelder and Marks (1969) and exhibitionism by Evans (1967).

The treatment studies cited above were concerned with the reduction of deviant sexual

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arousal. A common finding is that aversion therapy is more likely to lead to lasting changes in those subjects who were also capable of heterosexual responsiveness. Better results occurred in transvestites than in transsexuals, and in bisexuals than homosexuals. In an important study, Bancroft (1970) reported that those homosexuals who maintained improvement after therapy had shown an increase in heterosexual responsiveness (penile erection in response to heterosexual slides) during therapy. In fact he compared two methods of treatment: electrical aversion therapy and systematic desensitization. Overall outcome for the two treatments were similar. In both forms of treatment, decrease in deviant arousal occurred in some subjects, but those patients who showed an increase in heterosexual arousal during treatment were all in the improved group at follow-up.

This finding highlights a recurrent theme throughout good behaviour therapy practice—the behavioural analysis. This will usually identify in advance those patients in whom increasing heterosexual responsiveness must be the major focus of treatment. Primary orgasmic dysfunction and 'exclusive' homosexuality are common examples. Attempts to increase heterosexual responsiveness in homosexuals by systematic desensitization in imagination have been reported with moderately successful results (e.g. Bancroft, 1970; Kraft, 1967). *In vivo* desensitization did not produce sustained improvement in a patient (Discipio, 1968). Exposure to a 10 minute film of a seductive nude female (Herman, 1971) successfully increased heterosexual arousal in three subjects.

A more recently explored method is that of masturbatory conditioning (Marquis, 1970). Masturbation to the accompaniment of 'homosexual' and 'heterosexual' slides and fantasy can follow classical conditioning and fading procedures (Barlow, 1973; Herman *et al*, 1974; Freeman and Meyer, 1975; Conrad and Wincze, 1976).

Of course the presence of heterosexual arousal does not guarantee the consummation of heterosexual desire. Apart from lack of opportunity, social skills may be inadequate, social anxieties may be present, or lack of assertiveness may be a problem. A behavioural approach to these problems may be needed. In transsexuals and some homosexuals, opposite sex role behaviours and interests (gender role deviation) are present. In an interesting single case report, masculine ways of sitting, standing, walking and talking were established by modelling and videotape feedback. Sexual fantasies were then changed, and finally an increase in heterosexual and a decrease in homosexual arousal (Barlow *et al*, 1973). Although this is only a single case study, it demonstrates the value of extensive assessment of all the problem behaviours and careful planning of treatment. Initial attempts to reduce deviant arousal and transsexual interest by aversion therapy had failed.

In the treatment of deviant sexual arousal it may be important to maintain sexual responses and establish arousal to appropriate stimuli before eliminating deviant sexual arousal.

Marital therapy

Behavioural approaches to marital problems have gradually been introduced during the last decade, and many marital therapists and counsellors are at least familiar with terms such as 'contract therapy' or 'reciprocity training'. In learning terms, the initial key factor is the ability of the therapist or co-therapists to be sufficiently powerful social reinforcers for the parties for them to be able to agree on the therapeutic goals and to participate in treatment. Skynner (1976) suggests that the behaviour therapists' ability to arrange a cease-fire, provide a peace-keeping force to prevent hostility escalating, and negotiate a peace treaty may be more important than instrumental learning processes. However, the establishment of a therapeutic alliance is easily conceptualized in social reinforcement terms. The behaviour therapist will use learning principles to achieve this. Liberman (1970), adopting an operant and observational learning framework, outlines the three stages of maintaining a positive therapeutic alliance, making a behavioural analysis, and implementing behaviour change by alteration of reinforcement contingencies to fade and extinguish undesirable behaviour and shape desirable behaviour. Stuart (1969), also using an operant

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framework, focuses on reciprocity (something for something) as the expectation of spouses and a necessary component of a 'successful marriage'. In behavioural terms, both parties should dispense reinforcers to the other at an equitable rate. Successful marriages are characterized by reciprocal exchange of positive reinforcement. Unhappy marriages, in contrast, are characterized more by infrequent positive reinforcement and responses are controlled by negative reinforcement or punishment. Each partner is asked to specify behaviours they would like their partner to initiate or increase in frequency and then agree how a desired behaviour will be reinforced by a desired behaviour from the other partner. When the relationship is too negative for such reciprocity, a token economy was used. Azrin *et al* (1973) provide a more detailed account of the behavioural analysis of marital relationships, and adopt a similar contractual approach of 'reciprocity training' (reinforce the reinforcer). A within couple controlled trial showed that the reciprocity training was superior to the control counselling-catharsis treatment in the twelve couples treated. A token economy was not employed, technical terms were avoided, and, although specific behaviours were delineated, the aim was to introduce a global increase in desired behaviour and happiness. These studies of marital therapy are important not as outcome studies but as illustrations of the behavioural analysis of marital relationships and the demonstration that changes in actual behaviours, however comic or trivial the approach may seem, can lead to changes in attitudes and increases in expressed satisfaction and fulfilment. Crowe (1973) conducted a comparative outcome study which showed some advantage for behavioural treatment for specific symptoms and general adjustment.

Other disorders

Behaviour therapy can play an important role in the analysis and treatment of enuresis (Kolvin *et al*, 1973; Yates, 1975), stammering (Yates, 1975; Webster, 1974), anorexia nervosa (Agras *et al*, 1973; Bhanji and Thompson, 1974), alcoholism (Davidson, 1974; Lloyd and Salzberg, 1975), drug dependence (Callner, 1975) and obesity (Yates, 1975). It is also employed in some psychosomatic disorders. Outside the hospital setting, study difficulties, examination phobia and classroom difficulties may respond to a behavioural approach.

Biofeedback training

Biofeedback training is a specialized topic that overlaps with behaviour therapy. It is fashionable to say that it has not yet fulfilled its promise. There is some controversy about the classical conditioning of autonomic responses, and some researchers have failed to replicate the findings of earlier workers. In general the degree of biofeedback control of heart rate is modest. Reduction of systolic blood pressure may be achievable and useful in a proportion of hypertensives (Blanchard and Young, 1974; Blanchard *et al*, 1975).

Electromyograph (EMG) biofeedback training can be helpful in muscle tension headache (Budzynski *et al*, 1973; Wickramasekera, 1972) and anxiety neurosis (Canter *et al*, 1975). Biofeedback to change skin temperature has been effective in migraine (Wickramasekera, 1973; Johnson and Turin, 1975; Meyer, 1975b; Turin and Johnson, 1976) and warrants further study.

Discussion

At the present time behaviour therapy can be conceptualized both as an approach to the analysis of the development and maintenance of undesired behaviour (including cognition and subjective affect) and also to the design and application of procedures to modify it. The approach is based on principles derived from experimental psychology, particularly learning principles. There is an emphasis on operational knowledge, accurate specification of target behaviours, treatment goals, and methods to measure them. Treatment is an ongoing experiment. The importance of behavioural analysis cannot be over-emphasized, particularly with clinical patients who seldom have simple isolated problem behaviour. The practice of behaviour therapy should not consist of the application of well established standardized techniques selected on the basis of a diagnostic or descriptive label. Treatment needs to be individually tailored and modified accord-

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ing to progress. Flexibility, inventiveness and ingenuity may be required to devise and implement appropriate learning procedures. This is not to imply that there are no fairly standardized treatment procedures. Systematic desensitization, flooding, response prevention, aversion, assertive training, social skills training, shaping, fading, and modelling are examples. Cognitive therapy, if it is inferred from observable behaviour, would be included within behaviour therapy by many practitioners.

Ethical Considerations

Behaviour therapists commonly make explicit use of the relationship with the patient. Patients perceive them as warm, accepting, open, natural and involved (Staples *et al*, 1975). The therapist sees his role more as an instructor and the patient as a potential student who has the responsibility of choosing whether he wants to try to learn new behaviour. The goal is to develop behaviour which is under self-control and increase personal freedom by increasing their 'repertoire of environment-changing behaviours' (Krasner and Ullman, 1973). It is only the misuse or compulsory use of behaviour therapy that could be unethical or reduce personal freedom.

Applicability

It has been estimated that about 10 per cent of adult psychiatric patients are suitable for behaviour therapy (Marks, 1976). Certainly the majority of patients currently referred for behaviour therapy are those with phobias, obsessions, compulsions or circumscribed sexual problems, and these would not constitute a high proportion of psychiatric patients. However, if one considers behaviour therapy as a broad approach which informs and influences the total management of the patient not only in hospital, then the range of applicability can be extended to crisis intervention in families (Eisler and Hersen, 1973), social work (Jehu *et al*, 1972), group therapy (Liberman, 1970), marital problems (Bancroft, 1975), family therapy, interpersonal problems, chronic neurotic depression, weight disorders, alcohol and drug abuse, some organic disorders, and the rehabilitation of patients with organic deficits or chronic schizophrenia.

Efficacy

Behaviour therapy prides itself on its research orientation. It has certainly endeavoured to develop and apply a methodology to measure outcome. It has generated more controlled outcome studies than any other psychological treatment, but there is considerable dispute about its quality and the inferences that can be drawn. Controlled group studies comparing a behavioural treatment with psychotherapy, attention or no treatment have not shown behavioural treatment to be inferior, and the evidence is suggestive that desensitization is effective for phobias, electric aversion for some sexual deviations, *in vivo* exposure and response prevention for compulsions, and token economies for chronic schizophrenics. Evidence of efficacy of behavioural approaches for other disorders is less impressive. Despite increasing sophistication in the methodology of individual case studies, causal relationships cannot be established with certainty. On the other hand, the behaviour therapist who believes that the problem behaviour has been uniquely determined in each patient would expect that individually tailored treatment would be more effective than a standardized treatment. In this case, at best the standardized treatment would be less effective, at worst it would be irrelevant or dangerous.

Future Trends

Behaviour therapy now has a well-established place in psychiatric practice for the treatment of a limited number of disorders. About 70 per cent of a sample of American Medical Schools and Psychiatric Residency programmes predicted it will become part of the mainstream of psychiatry and exert a lasting but moderate influence, 20 per cent that it would become one of the major directions in which psychiatry would move, and 7 per cent thought it was a fad that would pass (Brady, 1973), a view recently canvassed by Shapiro (1976) in a provocative article.

It seems unlikely that it will not have a lasting influence. The extent of its influence may depend firstly upon the impact of technical advances which allow a totally new approach (e.g. neuropharmacology), and secondly on the

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extent to which further research in behavioural analysis of interpersonal difficulties, and psychotic-neurotic symptoms provides an understanding of their genesis and maintenance and indicates methods of prevention or modification.

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