BEHAVIOUR THERAPY IN THE 1970s

A Collection of Original Papers

Proceedings of a Symposium held at
the Bateman Centre for Postgraduate Medical Studies,
Birch Hill Hospital, Rochdale
on 25 October, 1969

under the auspices of
The Manchester Branch of the Division of Clinical Psychology
of the British Psychological Society

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PREFACE

'Behaviour Therapy in the 1970s' was the title of a symposium held on 25 Oct., 1969, under the auspices of the Manchester Branch of the Division of Clinical Psychology of the British Psychological Society. It was attended by a large number of professional people at the Bateman Centre for Postgraduate Medical Studies, Birch Hill Hospital, Rochdale. This volume consists largely of the papers that were presented at that symposium.

In behaviour therapy, theory and practice are continuously evolving, and the end of a decade therefore seemed an opportune time to review and evaluate some of the new principles and techniques based on the methods derived from learning theory. In view of the generally inadequate state of training in this area, there is an ever-present risk that clinicians with an inadequate background in learning theory and experimental methodology, and unaware of the complex issues involved, may employ behaviour therapy methods based on faulty formulations. The main purpose in publishing the proceedings of the symposium was thus to compensate to some extent for the general lack of formal training facilities, although there are now a few, and fortunately an increasing number of, departments in which behaviour modification is taught systematically, usually as part of a course in clinical psychology.

The symposium was organized along interdisciplinary lines and provided a forum for professional persons who had an interest in the application of learning theory to disorders of human behaviour; the audience contained people from diverse backgrounds, training, and degrees of experience in this field.

It is to be hoped that the symposium and this book will play some part in helping those who are concerned with the welfare of patients suffering from mental disorder to look at the problems of almost every area of clinical concern with scientific objectivity as well as humanity. By these means our knowledge of the mechanisms of mental illness and our ability to contribute to the relief of human suffering are likely to be increased.

We are grateful to Messrs. Eli Lilly and Co., Basingstoke, for providing sponsorship and making a generous donation towards the expenses. We should like to express our thanks to this Company and to the visiting speakers who made the symposium such a success. Our thanks are also due to Dr. J. L. Taylor, M.R.C.P., Postgraduate Medical Tutor, for making the Bateman Centre available and to the Rochdale and District Hospital Management Committee for providing hospitality at Birch Hill Hospital. Mrs. H. Blakemore (Springfield Hospital, Manchester) and Miss A. Ingham (Birch Hill Hospital, Rochdale) share our gratitude for secretarial help.

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EDITOR'S NOTE

The views expressed in this volume are those of the individual authors and do not necessarily represent those of the Division of Clinical Psychology or of the British Psychological Society.

BEHAVIOUR THERAPY IN THE 1970s

I

INTRODUCTION

LAURENCE E. BURNS

SINCE the beginning of the past decade, behaviour therapy has followed an exponential curve of growth. Research studies continue to grow, and an ever increasing number of papers appear in the world's psychological and medical journals. There are now four journals devoted entirely to behaviour therapy. This phenomenal growth of psychological treatment has probably no parallel in the fields of clinical psychology or psychiatry, as the 1960s has seen more change in our approach to the psychological causation and modification of mental disorders than in the whole of history. An important factor accounting for this rapid advancement is the disquiet felt by many clinicians with the methodological inadequacies of the psychodynamic approach arising from the work of Freud. It is not altogether surprising that the psychologist, by virtue of his training and skills in the problems of scientific investigation of human behaviour, has played a major role in the development of this new approach. While it does not represent the ultimate in psychological development or a universal panacea for all mental ills, it has opened up new vistas both for the therapist and the patient. Behaviour therapy is gaining recognition as an important contribution to the armoury of weapons in the battle against mental illness. It is becoming increasingly established as an applied science, and used judiciously, in a scientific way and in accordance with established principles, it is often possible to effect a rapid improvement in the patient's condition which might take years to achieve, if at all, using older psychotherapeutic methods.

Before considering a few of the probable developments of behaviour therapy in the 1970s, a short introduction for the

benefit of readers relatively unfamiliar with the subject may prove useful. 'Behaviour therapy', a term introduced by Skinner and Lindsley (1953) in a narrow sense related to operant conditioning and later, but independently, by Eysenck (1959), denotes 'the attempt to alter human behaviour and emotion in a beneficial manner according to the laws of modern learning theory' (Eysenck, 1964). Whereas the relevancy of the laws and paradigms of learning theory to the clinical alteration of behaviour is in no way disputed, Eysenck's definition seems unduly restrictive and may hamper the use and development of data collected from other fields of experimental psychology. Krasner (1969) has argued that the term 'behaviour therapy' seems more appropriate to the classic disease or medical model of abnormal behaviour. In this conceptualization, behaviour which shows substantial deviance from social norms is judged to be symptomatic of an underlying disease process. Ullman and Krasner (1965) have outlined the transfer of the medical model to the area of disordered behaviour. Although this model may be applicable to mental illness where, for example, genetically determined biochemical factors may be operative, Bandura (1969) and others argue convincingly that there is a large group of disorders, especially among the neuroses, personality disturbances, and abnormalities of behaviour in essentially normal persons where it is inappropriate and may actually impede our understanding of the genesis and treatment of such disorders. In these cases, where no organic pathologies are discernible as causal agents, the medical model should be replaced by a behavioural or psychological model which seems of more value in considering the problems of persistent maladaptive behaviour and which rests on the operational assumption that behaviour occurs lawfully; the term 'behaviour modification', rather than 'behaviour therapy', is preferred by some of these advocates. However, it would seem that there are sound arguments for the adoption of a multiple-model approach. For the purpose of this Introduction, the term 'behaviour therapy' will be used to denote those therapeutic techniques, derived from the experimental method in psychology and closely related disciplines and based largely on the principles of learning, which are designed to modify specific aspects of human behaviour that are regarded as abnormal.

The principles of learning have been established and verified by psychologists in well-controlled laboratory experiments. Learning theory has long occupied a central position in psychology. Although

nearly all human behaviour is learned, most behaviour therapists would not, of course, regard all disturbed behaviour solely in terms of faulty learning. However, even if the disturbance is based primarily on genetical or biochemical factors or results from lesions in the central nervous system, behaviour therapy, skilfully used, may still be successful in minimizing the behavioural consequences of such factors. A comprehensive knowledge of learning theory provides an important key to the understanding of human behaviour, normal and abnormal. Abnormal behaviour can result from the learning of maladaptive patterns of behaviour (or from the failure to learn adaptive responses thus resulting in behavioural deficits) and it is governed by the same laws that result in other forms of learning. Since human behaviour problems are seen to arise from a lawful source, their amelioration is sought by the adaptation and extension of the data and methodology of the psychological laboratory to the clinical setting and the natural environment.

Behaviour therapy did not occur in a vacuum but was the logical evolution of the scientific method in psychology. Pavlov (1927, 1928) and others laid some of the experimental foundations of this approach, but it was Watson and Rayner (1920) who clearly demonstrated the creation of a phobic reaction to a white rat and by generalization to other furry objects in an 11-month-old child, Albert. Logical deductions, based on the principles of learning, were made concerning the treatment of the condition. As Albert left hospital before treatment could be begun, it was Jones (1924) who successfully implemented Watson and Rayner's deductions in a similar case. However, with a few notable exceptions, such as Dunlap (1932), Max (1935), and Mowrer and Mowrer (1938), nearly 40 years elapsed before the extensive data of classic and operant conditioning were applied in the clinical setting. Kushner (1968) suggests that one reason for this delay was that these principles remained within an academic rather than a clinical setting. The advance of psychoanalysis was another contributory factor.

A major break from the mainstream of the current psychotherapeutic thought occurred when Wolpe (1958) published his technique of systematic desensitization, which was based on Hullian learning theory and his own conception of 'reciprocal inhibition'. Anxiety is ameliorated through the use of incompatible responses such as deep muscular relaxation, a technique described by Jacobson (1938), or other appropriate means. Most patients

can become adept at this technique but in a few cases the use of a short-acting barbiturate such as methohexitone sodium (Brevital, Brietal) may be beneficial (Friedman and Silverstone, 1967; Friedman, 1968), although if a patient can be taught deep relaxation he has acquired a valuable skill that he can use in the future to counter tension. The patient while deeply relaxed proceeds through an imagined hierarchy of anxiety-evoking items beginning at the lower end of the fear gradient. Relaxed states or other responses are progressively substituted for those of anxiety and as a result of a proposed generalization process the patient remains free of anxiety in the presence of the real stimuli.

The passing of time has seen refinements and extensions of systematic desensitization. Lang (1970) has proposed for experimentation, in view of Adaptation Level theory (Helson, 1964), a different treatment format. Hierarchy items should be administered in the normal order between sessions but in reverse order within sessions, e.g., if four items are presented per session the patient begins treatment with item 4, hoping to finish with item 1; the following treatment session begins with item 7. Lazarus (1961) introduced group desensitization to treat phobias and sexual disorders, using a standard hierarchy. Paul and Shannon (1966) and Suinn (1968) have also utilized the group procedure. Suinn and Hall (1970) treated students by having them view a videotape of another group being treated for the same problems. Results showed that both groups experienced the same level of anxiety reduction.

Systematic desensitization has now become one of the most effective of the new therapeutic techniques. It has been used to treat a wide range of disorders including monosymptomatic and polysymptomatic fears and phobias, impotence and frigidity, exhibitionism, alcoholism, insomnia, psychosomatic conditions, obsessive-compulsive disorders, etc. In a critical and detailed review of 75 papers on this method covering nearly 1000 different patients in the hands of over 90 different therapists, Paul (1969b) concluded that the findings were overwhelmingly positive across a broad range of distressing problems in which anxiety was of basic importance. There was little evidence of symptom substitution or relapse although the majority of clinicians were clearly attuned to these problems.

To deal effectively with aspects of individual behaviour behavioural clinicians have developed further sophisticated techniques

such as classic aversive and instrumental avoidance conditioning (homosexuality, alcoholism, smoking, fetishism, gambling, voyeurism, writer's cramp); massed practice (tics, stuttering); covert sensitization (homosexuality, smoking, obsessional behaviour, alcoholism); aversion relief (phobias, transvestism); operant conditioning (adult and childhood psychotic illness, delinquent behaviour, mental retardation, normal adjustive problems in children), etc. It will be observed that the sub-types of behaviour therapy can be applied to a wide range of abnormalities; their effectiveness can no longer be doubted (Eysenck, 1965; Suinn, 1969). These methods, with their strong experimental underpinning, focus treatment on the symptoms and how these affect the functioning of the patient and not on hypothetical underlying complexes.

The end of a decade provides an opportunity to focus our attention on the next 10 years. Prediction is a somewhat difficult task; developments in any field are seldom capable of being categorized into neat 10-year pigeon holes. Clearly a brief survey of this nature cannot hope to touch on all the interesting new trends and developments which may occur in the 1970s and it must be subject to personal preferences. Comment will therefore be restricted to a few selected topics of particular interest.

It is clear from studies mostly based on general practice that the incidence of emotionally determined illness is high. Figures quoted in this country vary from 9·4 per cent (Kessel, 1960) and 14 per cent (Shepherd, Cooper, Brown, and Kalton, 1966) to 23·2 per cent (Hewetson, McEwan, and Ollendorf, 1963) and 42·8 per cent (Hopkins, 1955, 1956), 11·1 per cent for formal psychiatric illness, and a further 31·7 per cent for other stress disorders. Some 25 million working days are lost annually in industry through mental illness (*Hansard*, 1959). In the United States figures range from 10 per cent of the population (Joint Commission on Mental Illness and Health, 1961; Eisenberg, 1961; Nichols, 1963) to 33 per cent (Cowen and others, 1963). Albee (1963, 1965) has documented the professional manpower realities in the mental health professions and concluded that a major crisis exists; even allowing for the fact that many persons who might benefit from treatment are not expected to seek treatment (Schofield, 1964), it is now recognized that professional manpower cannot cope with mental health needs.

One possibility to help alleviate this problem is the use of non-professionals. Guerney (1969) refers to these as being 'naturally significant others'—parents, nurses, peers, husbands, wives, teachers, volunteers, etc. There have already been several studies along behaviouristic lines using such agents and it seems reasonable to predict that this trend will develop further in the 1970s. The active involvement of agents in the treatment programme is certainly not new. Freud in his report published in 1909 on Little Hans indicated that the father was responsible for the actual treatment, under his direction, and that he was 'indispensable' to the treatment. If it is accepted that both desirable and undesirable behaviours are maintained by their effects upon the child's natural environment (Bijou and Sloane, 1966) and that the most efficient way to modify deviant behaviour may be to change the reactions of the natural milieu to that behaviour (Zeilberger, Sampen, and Sloane, 1968) then the use of consistent and appropriate differential reinforcement contingencies programmed by the parents under supervision is clearly desirable. Treatment can be carried on 24 hours a day. Changes in the child's behaviour may reinforce and maintain the change in the parents and they may come to appreciate the factors which were contributing to and maintaining the disturbed behaviour of their child. Walder (1966) stated: 'We sometimes wonder what the effect on society would be if all parents-to-be had learned the principles of behaviour modification before their children arrived.' Concern over future generations of patients and the primary prevention of at least some behaviour problems may lead behaviour therapists to become interested in some such programme.

Other studies report the use of housewives (Rioch, 1966), student volunteers (Reinherz, 1964; Cowen, Zax, and Laird, 1966), peers (Gittleman, 1965), and teachers (Zimmerman and Zimmerman, 1962; Thomas, Becker, and Armstrong, 1968). It can be argued that such people are, after all, the natural reinforcers of both normal and abnormal behaviour; what is new is the programmed consistency of their own behaviours in relation to the disturbed behaviour of the patient. Whereas there is no lack of successful case reports, no well-documented research has been presented to date to support the alleged effectiveness of psychotherapeutic agents. Although there are problems of training (MacLennan, 1966; Riessman, 1967), the evidence that is available suggests that behaviour therapists could successfully use such resources, and

an exploration of their availability early in the behavioural analysis would permit determination of the extent to which clinical intervention could be supplemented, thus affording a valuable saving of the therapist's time.

In view of the large number of patients in mental hospitals and the limited staff and resources available, concern has been focused, by and large, on the management and control of the patients. Throughout the period of institutionalization many of the behaviours needed for a satisfactory adjustment outside the hospital are gradually weakened with a progressive loss of vocational and social competence as the individual conforms more and more to the patient role.

However, emphasis is increasingly being placed on rehabilitation, and Schwartz (1957) outlined a number of ways to aid this process and facilitate the development of a therapeutic environment. Recently programmes have been introduced which have as their goals the development of behaviours which lead to social rewards from others and which build up skills the individual must acquire if he is eventually to live outside the hospital. This advanced type of social engineering, based on the token economy, provides reinforcement contingent upon acceptable behaviours and affords feedback for both desirable and undesirable behaviours. Such programmes have been described by Ayllon and Azrin (1965). Further studies have been reported by Atthowe and Krasner (1968), Ayllon and Azrin (1968), Lloyd and Garlington (1968), Schaefer and Martin (1969), and Lloyd and Abel (1970). The effects of these programmes on the behaviour of both patients and staff have been encouraging. Stuart (1969) has even advocated the introduction of response-contingent methods of rewarding staff. No doubt the coming decade will witness increasing use and refinements of contingent reinforcement on a group basis not only involving adult psychiatric patients but also retarded and maladjusted children, delinquents, etc., the initial studies on these last groups being equally encouraging.

While due allowance must be made for genetic endowment and other factors, the use of behaviour therapy techniques in the field of mental retardation seems particularly promising. '. . . Behaviouristic and operant methods . . . seem to be particularly effective in initiating the very earliest stages of learning and also in those situations where the desired behaviour is already present but competing with behaviours which are being reinforced' (Mittler,

1970). Two techniques, combined with positive reinforcement, which appear to be valuable are *shaping* (Skinner, 1953), in which behaviour which moves closer and closer to the ultimate performance desired is reinforced, and *fading* (Terrace, 1963; Moore and Goldiamond, 1964), in which the discriminative stimulus conditions governing the behaviour are changed so that it comes under the control of new discriminative stimuli. Bandura (1969) has shown that once an individual has acquired the skill of imitation, demonstration or modelling techniques can be employed to generate new behaviours quite rapidly in subjects with behavioural deficits. Bandura's work has been generally overlooked by behaviour therapists; vicarious learning techniques applied to subnormals may be more economic in terms of time and effort than the use of shaping procedures for each new response. Properly controlled studies are urgently needed.

It is unfortunate that although traditional methods of psychotherapy have been relatively unreliable and even crude, and despite recent progress that has been made in modifying abnormal behaviour with ever greater precision, there are still some clinicians who regard laboratory research as sterile and contrived and who ignore the potential benefits of recent technological advances. One of the most significant signposts for the seventies is the use of computers and other electronic devices in behaviour therapy. Therapy which employs such procedures may not meet the essentials of the definition of psychotherapy as proposed by Winder (1957), but automation seems inevitable and it should lead to increased efficiency and effectiveness. Clearly there are advantages in using such methods. Many of the long routine tasks in behaviour therapy, such as relaxation instructions, presentation of aversive stimuli, and items from hierarchies, can be removed from the shoulders of the therapist, thus preventing fatigue and freeing him for other duties. More patients could be taken on for treatment. Greater procedural rigour and control could be achieved, with the real possibility of increasing our understanding of the therapeutic mechanisms involved.

In the first paper on automated desensitization Migler and Wolpe (1967) reported the successful treatment of a patient with fear of speaking in public, using a specially modified tape recorder which was under the control of the patient. Working along similar lines Clarke (1969) has developed an automated hypnosis device. Feingold (1969) has described the treatment of sexual deviants

using a tape recorder in which the presentation of the stimuli for imagination and the aversive shock were automatically programmed, while Gathercole (1970) has fully automated the avoidance conditioning treatment of homosexuals. The initial results from researchers using automated treatment indicate that it is as successful as therapist-administered treatment.

Of particular interest here is the research being carried out by Lang (1969a, 1970). Following the encouraging results obtained by the Device for Automated Desensitization (DAD), Lang and his colleagues are now using a LINC-8 general-purpose digital computer. This has potentially powerful capability in that the strength, content, or sequence of stimuli can be determined by the changing responses of the patient as treatment proceeds. Psychophysiological activity can be monitored and processed; fear stimuli can be blocked until the computer determines that conditions of low autonomic arousal exist, which will presumably help the desensitization process. It would seem that the computer is an ideally suitable aid for use in behaviour therapy.

Another area of promise in the 1970s will be the further exploration of the possibility of patients learning direct control of autonomically mediated responses. Neal Miller and his colleagues have shown that glandular and visceral learning can be brought under operant control in animals which were curarized to take into account possible mediating responses. In a series of experiments they were able to condition rate of salivation (Miller and Carmona, 1967), heart-rate (Miller and DiCara, 1967), vasomotor responses (DiCara and Miller, 1968a), intestinal contractions (Miller and Banuazizi, 1968), and EEG activity (Carmona, 1967). In one experiment to show the specificity of sympathetic control, differences were obtained in vasomotor responses between the two ears of rats, using photocell devices (DiCara and Miller, 1968b).

Although it may not be valid to extrapolate these results to man, a number of studies suggest that humans can learn to control autonomic responses. Hnatiow and Lang (1965) showed that when humans received continuous exteroceptive feedback they could significantly reduce heart-rate variability, and Ascough and Sipprelle (1968) demonstrated that spontaneous decrease or increase in heart-rate can be brought under control of operant verbal conditioning. Engel and Melman (1968) have treated cardiac rate arrhythmias using operant techniques. Hnatiow (1968) was able

to show differences in E.C.G. waveform in subjects whose heart-rate was under instrumental control. Crider, Shapiro, and Tursky (1966) altered electrodermal activity and Kamiya (1968) produced changes in E.E.G. responses. Recent experiments on visceral learning in humans have been summarized by Katkin and Murray (1968).

These studies provide some clues to the possible genesis and therapy of psychosomatic symptoms, but more systematic research on the most effective techniques of inducing such learning is required. Clearly in psychosomatic conditions other factors must be taken into consideration as well, and Moore (1965), for example, has shown the value of desensitization in producing an alleviation of breathing difficulties in bronchial asthma. Exteroceptive feedback may prove especially useful during the relaxation process in desensitization.

Recent advances in electronic circuit technology have resulted in really complicated functions being realized in very small packages. Developments in telemetric systems, which can provide information on the psychophysiological state of patients over distance, promise to have a wide range of applications. Up to the present most of the monitoring of patients has taken place under laboratory conditions; remote instrumentation systems will allow the investigation of therapeutic processes which have been relatively inaccessible. The on-going responses of the patient can be monitored in more natural anxiety-provoking situations with the possibility of feedback information being provided to the patient. Generalization processes from the laboratory or the clinic to the natural environment could be studied.

A few of the trends and developments which are expected to be of importance in the next 10 years have been reviewed in this chapter. They emphasize the need for the behaviour therapist to have a broad perspective and to co-operate to the full with other disciplines. By 1980 behaviour therapy will be based on an even sounder theoretical foundation. Established methods will be refined and therapeutic innovations, backed by a well-developed technology of behavioural assessment, will result from increased scientific research, and will lead to increased efficiency and economy of time. Assessment and therapy will be less subject to individual judgements and biases. Much more will be known about the types of disorders that are likely to respond efficaciously to particular techniques; also to what extent personality and other characteristics affect the issue.

The science of the prediction and modification of human behaviour is not without its dangers. Let us hope that those who apply these techniques will not only be renowned for their skill but also for their integrity and prudence. For the behaviour therapist and his patient, the brave new world of tomorrow looks like being an exciting and rewarding place.

2

A COMPARATIVE STUDY OF AVERSION AND DESENSITIZATION IN THE TREATMENT OF HOMOSEXUALITY

JOHN BANCROFT

THE study reported here compared two methods of treating homosexuality. Its main purpose was not to investigate the treatment of homosexuality but rather the mechanisms involved in such treatment which might be relevant to psychological treatment in general. Homosexuality was taken as the clinical problem because it does have some advantages. Although a complex problem, the aims of treatment can be clearly focused and it is an area which, compared with many, permits relatively objective measures of change; sexual behaviour can be defined and sexual responses during treatment can be measured in the male by means of penile plethysmography (Bancroft, Jones, and Pullan, 1966).

Recently the literature on the treatment of homosexuality by, first, orthodox psychotherapy and, secondly, aversion therapy was reviewed (Bancroft, 1970). Attention was confined to those reports where a series of treated cases was described, avoiding those in which single cases or a small series of selected cases were involved. By pooling together all these various series it was found that the incidence of improvement was approximately 40 per cent in both the group treated with psychotherapy and in the group treated with aversion therapy. This, of course, was a very crude comparison as the criteria of improvement were almost invariably ill defined.

There was also some evidence that the more directive forms of psychotherapy produced more improvement; in other words, change in sexual orientation was more likely to occur if treatment was clearly aimed at it. These findings suggested the following 'null hypothesis':—

In homosexuals seeking treatment for their sexual problem a percentage of them will be improved by treatment, whatever treatment is given,

provided that the expectancies of the patient are the same, the aims of the treatment are the same and the expectancies of success and the expertise of the therapist are the same.

The following study aimed to disprove this hypothesis. To do this it was necessary to show that when two different treatments were given to two similar groups of patients each treatment produced different results which were understandable in terms of the methods used. Two methods were therefore needed which were contrasting in their techniques and in their immediate aims but which were similar in their ultimate aims and in which the therapist had more or less equal expertise and expectancies of success. Aversion was one obvious choice; the author had already considerable experience of this technique in treating sexual disorders and a fair amount of success (Bancroft and Marks, 1968; Bancroft, 1969; Marks, Gelder, and Bancroft, 1970). The other method chosen was systematic desensitization.

Desensitization was a relatively untried treatment for homosexuality (Kraft, 1967) but had been used by the author in the treatment of phobias. Most modern psychoanalysts consider that the crux of much homosexuality is a fear of heterosexuality akin to a phobia (Bieber and others, 1962) and it made sense to treat homosexuality by tackling this heterosexual anxiety. Desensitization was a method which permitted the treatment to be structured and it enabled a number of measures of change to be used which could also be incorporated into the aversion procedure. These provided a direct comparison of the two methods. The results presented here will be confined to the direct comparison of these measures in the two treatment groups. Other data from the study will be reported elsewhere.

The study was designed in such a way as to make sure as far as possible that the treatment received was similar except for the specific techniques involved. One therapist was involved throughout. Both methods involved 30 sessions of treatment on an outpatient basis, each session lasting approximately 1 hour with usually 2 sessions a week. The average duration of treatment was approximately 4 months. The patients were only offered treatment if they were prepared to accept either method after each one had been explained to them, and they were allocated to one or other treatment group in such a way as to match the two groups as equally as possible for age, normality of the E.P.I., and degree of previous heterosexual experience. This was done where possible

by pairing them and in fact 18 of the 30 patients were paired into 9 pairs; the remaining 12 were randomly distributed into the two groups. The degree of match was reasonable, as shown in *Table I*, although there were some differences in the amount of previous heterosexual experience.

Table I.—COMPARISON OF THE TWO GROUPS

	AVERSION 15	DESENSITIZATION 15
Mean age	30·7	28·3
Age range	19–46	20–38
Age > 35	4	2
E.P.I. score outside normal range	9	9
Previous heterosexual experience		
Category 1	4	2
Category 2	1	4
Category 3	5	5
Category 4	5	4
With heterosexual partner at onset	5	3

Number of matched pairs: 9. None of the differences between groups reaches significance at the 5 per cent level.

The categories of heterosexual experience used were defined as follows:—

1. Unable to recall any heterosexual interest or fantasy since puberty.

2. Heterosexual interest at some stage since puberty but no attempt at genital contact with a female (i.e., touching the female genitalia or sexual intercourse).

3. Attempted genital contact but always experienced anxiety, revulsion, or impotence in doing so.

4. Achieved genital contact at some stage with no anxiety, revulsion, or impotence.

The absence of previous heterosexuality as in Category 1 is considered by several workers (e.g. MacCulloch and Feldman, 1967) as being of bad prognostic significance.