A COMPARISON OF POSITIVE AND NEGATIVE (AVERSIVE) CONDITIONING IN THE TREATMENT OF HOMOSEXUALITY

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Summary—A variety of techniques based upon learning theory were applied in the treatment of a male homosexual patient. The experimental results point to the overwhelming importance of aversive techniques for the treatment of this condition when compared with non-aversive techniques. The discussion draws attention to the inappropriateness of the medical concepts of cure and relapse in behavioural manipulations involved in behaviour therapy.

INTRODUCTION AND PROBLEM

IT IS CLEAR from Rachman's (1961) review that interest has recently been focused upon the possibility of applying principles of learning to the treatment of psychiatric disorders of a sexual nature. Of the wide variety of sexual aberrations so treated, one or two reports have been concerned with homosexuality (Freund, 1960; Stevenson and Wolpe, 1960) but perhaps the best known is that by James (1962). Both Freund and James incorporate positive conditioning into their essentially aversive conditioning procedure, the former by showing his patients films of nude or semi nude women approximately seven hours after the administration of testosterone, the latter by the use of a similar technique with the addition of records of a "sexy" female vocalist. Both investigators use emetine and/or apomorphine as a means of producing an aversive response. It is now generally recognized that the choice of emetics for these deconditioning procedures produces great difficulty in timing the CS–UCS interval (Eysenck, 1960; Blakemore *et al.*, 1963), and Rachman recommends the greater use of faradic as opposed to chemical aversive conditioning (*idem*).

The present experiment is concerned with the use of faradic aversion conditioning in the treatment of a homosexual patient. In line with the earlier experiments above, positive conditioning to female figures has also been incorporated into the design, but in such a way as to throw light upon the relative merits of each of the two components.

THE PATIENT

The patient was a male homosexual aged 35 years. A short time prior to admission he had read an account in a Sunday newspaper of James's article which had appeared in the British Medical Journal of 17 March 1962. As a direct result of reading this newspaper article he sought psychiatric help for his condition, demanding aversion therapy. He was admitted to Banstead Hospital some weeks later under the care of a consultant psychiatrist and referrred to the Psychology Department for behaviour therapy. He had given up his job in order to be free to receive treatment and had sub-let his flat for three months. He brought with him sixty photographs of nude young and adult males which he had been using in his masturbation sessions.

On admission his main complaint was one of frustrated homosexuality, i.e. he was finding it difficult to obtain partners. He saw no point in marriage as it would be unfair to his wife. He regarded a married state as an ideal one for him but could not begin to contemplate it before his homosexuality had been cured. He also had exhibitionistic tendencies and had attended nudist camps. On occasions he had exhibited himself to young boys and this had been gradually getting worse. He had never experienced heterosexual activity.

The patient had four siblings—two older, one twin, and one younger. He had been educated at a Technical Grammar School and, since leaving, had changed his jobs rather frequently. His first homosexual experience had been at school when he was masturbated by another boy but had not reached emission. At the age of 25 years he had experienced his first mutual masturbation with a male partner and from then on had indulged in frequent self masturbation, always with homosexual fantasies. Sexual behaviour with male partners had taken place whenever the opportunity had arisen. His latest partner had co-operated with him for the sake of the friendship, but had strongly advised him to seek treatment.

METHOD

Three main techniques were employed, the first two being positive conditioning and the third a combination of positive and negative conditioning.

In the first technique the patient was directed into a small room having a three by three feet floor area which was completely covered by an electrical grid as described earlier (Blakemore *et al.*, 1963). The door was closed and all lights switched off. Inside the room a microphone was attached to the wall immediately in front of the patient and connected to an amplifier in the adjoining room which was occupied by the psychologist. Also in front of the patient, at head height, was a picture of an attractive, scantily dressed female which was visible only when illuminated by the operation of a switch by the psychologist. The patient was supplied with tissues and instructed to masturbate in the darkness, using whatever fantasy he desired. He should, however, keep his eyes open, look ahead of him, and report "now" when he felt that orgasm was being reached. This report served as the experimenter's cue to illuminate the female picture which remained illuminated until the patient reported "finished" immediately following ejaculation. He then had to describe the picture as a means of ensuring that he had been observing it for the limited period of exposure. The patient was instructed that no shock whatsoever would be given during these trials. Different pictures were used for each trial.

It was hoped that these female pictures, being illuminated immediately preceding ejaculation would, on a classical conditioning paradigm become the conditioned stimulus for the ejaculating response and therefore might be used by the patient as part, at least, of his masturbation fantasy during subsequent trials. After the third trial he did report the use of the previous day's picture in this way, though by the eleventh trial there was no change in his masturbation fantasy which was entirely homosexual.

In the light of this failure it appeared possible that we may have been attempting backward conditioning by presenting the picture after the reinforcement had commenced. The fact that on no occasion had the patient not reached emission within a few seconds of reporting "now" was consistent with this interpretation, i.e. he must have been certain that orgasm was imminent. An attempt to eliminate this difficulty was made in the second technique.

In this, the picture was illuminated for one second's duration at random intervals. The patient was instructed to watch the wall in front of him all the time he was masturbating. In the early trials the picture was illuminated six times before emission. This was increased trial by trial until, in the later trials, the picture was more under illumination than in darkness. He still reported when ejaculation had commenced and the picture was then constantly illuminated until he reported "finished". By the fifth trial the patient was utilizing homosexual fantasy during the periods of darkness, and by concentrating upon certain aspects of the illuminated picture (e.g. the buttocks) was able to use these aspects as part of his homosexual fantasy.

By this time he was complaining that he had received no aversion for his condition and felt that "the longer it was delayed the more (he) would think we were not progressing". The third technique was therefore resorted to.

The third technique consisted of a combination of negative and positive conditioning trials, conducted separately, but both administered every day excluding Sundays. The positive trial was identical with that described under the last method, i.e. manual masturbation in the presence of a female picture under varied interval illumination, the flash frequency being identical with that used in the terminal trial of the second technique. The patient was instructed that no shocks would be given in these trials. The negative or aversion trials were achieved by illuminating one of the patient's own photographs of male nudes (both adult and younger males) and delivering a strong electric shock to the patient's bare feet through the grid. The electricity was provided by a G.P.O. hand operated generator delivering 120 V a.c. when resistances of 10,000 Ω and upwards were placed on the grid. As before (Blakemore *et al.*, 1963), two sharp turns of the generator handle were sufficient to give a painful electric shock. The shock was delivered from 0·5 to 1·0 sec after the picture had been illuminated. In order to ensure that the patient was in fact observing the picture, a varied interval schedule of (negative) reinforcement was employed. Within each trial the picture was illuminated forty times, nine of these selected at random being followed by shock. Usually five trials were given together, although on occasions this was increased to ten. Each trial took ten minutes. The male photograph was changed daily. It quickly became apparent that the patient was attending to the photograph (or to the light) during these trials as an obvious respiratory change could be heard through the amplifier each time the picture became illuminated. The patient was very soon reporting sensations of electric shock when the picture was illuminated, irrespective of whether shock actually followed.

On the first positive conditioning trial following aversion the patient reported great reluctance to utilize homosexual fantasy, and for 60% of the time he used heterosexual fantasy. This increased to 90% on the second positive trial, and by the third was 100%. This, the patient reported, was the first time in his life that he had used heterosexual fantasy in this way. The fourth trial met with the same success. On the fifth and subsequent positive trials the female picture was illuminated all the time and, although the patient was unable to reach emission on the fifth and sixth trials he was also unable to use homosexual fantasy.

The patient then spent a weekend out of hospital. He returned on Monday morning and reported that he had masturbated three times over the weekend always to homosexual fantasy. His seventh trial was also accompanied by homosexual fantasy.

At this point the patient became extremely emotional, accusing the psychologists of a complete lack of understanding of him as a person. He claimed that we had been critical of him right from the start and that we were more interested in our experimental results

than in him. He received no further conditioning treatment for a little over a week at the end of which he asked if he could continue treatment, apologizing for the outburst. He reported that during the week he had masturbated successfully four times to female pictures with a little homosexual fantasy added.

On the eighth and ninth he did not reach emission but reported 100% heterosexual fantasy. He described these failures as being due to the fact that the picture was illuminated all the time and that the presence of an illuminated picture was disrupting. On the tenth and subsequent trials he reached emission with the picture illuminated throughout. He soon began to report that he was masturbating away from the department either to pictures, which he provided himself, or to female fantasy, sometimes using images of female patients whom he had met on the ward. The total number of positive trials, after aversion had been introduced, was 38, and the total number of aversion trials was 100. The patient had remained in hospital for three months and was therefore discharged.

PROGRESS

Eight months after discharge, the patient wrote to say that he had been prevented from putting into practice his new found heterosexuality for two months after leaving hospital because he could not get rid of the person to whom he had sub-let his flat. He had attempted intercourse with one female "and although (he) was quite strong, she was a virgin, nervous and unsatisfactory". He could still obtain orgasm by manipulation to heterosexual stimuli and had decided to wait until he would meet the right girl and fall in love. Occasional homosexual patterns of behaviour had occurred but he was not unduly worried about these which he regarded as a safety valve. He reported that there had been one or two minor trends towards exhibitionism but whereas before treatment he had only considered young men and boys, he now considered persons of both sexes. This occurred only in hot weather of which there was not much in an English summer.

DISCUSSION

This patient acquired, during his period of hospitalization, a new pattern of sexual behaviour in the form of masturbation to female pictures and fantasies. As in all single case studies it is impossible to be certain about the causal agent. What is striking from the above, however, is the temporal relationship between change in behaviour and treatment schedule, in that it was not until aversion therapy (method III) was introduced that any change in masturbation fantasy was observed. It would therefore appear that, for this patient at least, aversion therapy played some part in effecting the behaviour change. It should be noted in this connexion that the emotional outburst after about a week of aversion therapy did not precede the change in fantasy, which had already appeared, and therefore cannot be regarded as being responsible for it. Whether or not either or both of the first two methods would have been successful without the introduction of aversion therapy cannot be said. In the light of a complete absence of success with these methods plus the fact that the patient in these circumstances was probably receiving daily reinforcement for his homosexual fantasies, the answer would appear to be in the negative.

The immediate aim of this experiment was to achieve successful masturbation to female fantasy. This, of course, is a step removed from successful heterosexual activity, but it is difficult to take the final step which must be the responsibility of the patient himself. One cannot fail to be left with the suspicion that heterosexual activity at the real rather than at

the imaginary level would in fact be more successful in effecting a behaviour change. It would appear from the follow-up that this patient regards his continued ability to use female fantasy in this way as an assurance that real heterosexual activity is still within his power, and in so far as this is true, the experiment can be regarded as successful.

The patient has, however, technically relapsed, and will be regarded in this way by many. It is therefore important to examine the meaning of this concept. Its main usage is in the field of medicine when people who seem to be recovering from their disease are overcome by it once more. If we consider our attempt to treat our homosexual as a straightforward exercise in the psychology of learning, then the problem is one of behaviour manipulation and change; are the changes which are achieved, being maintained or not? The medical concept of relapse therefore is inapplicable within this framework.

In a similar way, if we regard homosexuality as a learned behaviour pattern and not as a disease, then the medical concept of cure is also inapplicable. If anything has been achieved with this patient it is simply that he has been taught to use females in a way completely new to him and more in line with the requirements of the existing social structure. The fact that he has, on a few occasions, indulged in his previous behaviour pattern has little predictive value for his future sexual behaviour at this stage. There would appear to be every possibility that he will become well adjusted heterosexually when he meets someone he is sufficiently fond of to marry.

Next we will consider the maintenance or otherwise of a newly acquired behaviour pattern. What is sometimes not recognized is that behaviour patterns are maintained for one of two reasons. Firstly the behaviour may be undergoing extinction and becoming weaker or, secondly, the behaviour may be receiving reinforcement and being strengthened. From this viewpoint, therefore, all behaviour changes effected by behaviour therapy or indeed by any other method will be maintained over *long* periods of time only by the provision of reinforcers. The difficulty, of course, being that once a patient has left hospital, our chances of controlling his reinforcement system are negligibly small. Once we lose control of the reinforcers, however, we lose control of the behaviour itself. If this be so, a guarantee that any behaviour change will be maintained simply cannot be made. Predictions can be made only by considering the probable presence or absence of either positive or negative reinforcers, which may be complex or simple, consequent upon whether the new or old behaviour patterns do or do not occur. For example, regarding the present patient his new behaviour pattern would be dependent upon the amounts of positive and negative reinforcement he obtained for behaving in a heterosexual way in combination with the amount of positive and negative reinforcements he obtained for behaving in a homosexual way. If we add to this the probability that his aversive response to young men and youths is extinguishing with repeated presentation of these without shock as he meets them in every day life, it can be appreciated, even on the basis of this over-simplified analysis, that to make predictions about the maintenance of the patient's heterosexual behaviour would be sheer folly. One way round this difficulty has already been pointed out by Eysenck (1963) when he stresses the importance of over-learning the new behaviour pattern. This will undoubtedly contribute to a longer extinction phase, i.e. the new behaviour pattern will be maintained for a longer period, but in our view the presence or absence of reinforcers is far more important.

With this patient, at least there was some attempt to substitute more adaptive behaviour for his maladjusted pattern. With aversion therapy as it is normally applied to alcoholics there is usually no attempt at such a substitution. Furthermore, in these cases the aversive

response to alcohol is likely to undergo its first extinction trial within a few hours of leaving hospital when the patient perceives the "off licence" shop. It may be even worse if a pretty girl happens to be looking into the window at the same time. It is mainly for these reasons that we believe that the orthodox deconditioning of alcoholic patients is not likely to produce behaviour changes of lasting value. The position with regard to homosexuals would appear to be far more promising and further experimental investigations are at present under way.

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