Psychotherapy by Reciprocal Inhibition

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Abstract—Reciprocal inhibition is a process of relearning whereby in the presence of a stimulus a non-anxiety-producing response is continually repeated until it extinguishes the old, undesirable response. A variety of the techniques based on reciprocal inhibition, such as systematic desensitization, avoidance conditioning, and the use of assertion, are described in detail. Behavior therapy techniques evaluated on the basis of their clinical efficacy are found to have striking success over traditional psychoanalytic methods. Currently, more comparative studies are required which will validate the merit of behavior therapy in the psychotherapeutic field while experimental research should continue to refine the techniques.

PSYCHOTHERAPY IS AT LAST EMERGING from the wilderness of speculative thinking and making its way into the cultivated fields of scientific research. Therapies based on speculative theories are beginning to give way to methods rooted in experimentally established principles. It has been demonstrated that neuroses can be produced experimentally in animals, and their production is a matter of learning. The neurotic behavior can be removed by relearning procedures. Similar methods have been shown to be highly effective in overcoming human neuroses in a thorough and lasting way. Reciprocal inhibition techniques are one group of such methods, and I shall tell you about them and their achievements by way of answering four questions:

What are reciprocal inhibition techniques?

What reciprocal inhibition techniques are there?

What are the clinical achievements of reciprocal inhibition techniques?

What are the urgent research questions?

What Are Reciprocal Inhibition Techniques?

Reciprocal inhibition techniques are used to overcome persistent habits of unadaptive responding. A competing response is made to

interfere with the response that one wishes to abolish. The competing (incompatible) response must therefore be elicited in the presence of the stimuli that would evoke the undesired response, and must be "stronger" than the latter. The undesired response is then inhibited, and the strength of its habit consequently diminished. Since the source of the inhibition is the competition of a second response, and since under other circumstances the situation could be reversed and the second response could be inhibited by the first, it is appropriate to describe the process of change as conditioned inhibition based upon reciprocal inhibition.

What Reciprocal Inhibition Techniques Are There?

Reciprocal inhibition techniques have in the main been used to overcome neurotic anxiety (persistent unadaptive learned *anxiety*-response habits). Their efficacy was first demonstrated in connection with experimental neuroses in cats. Neurotic anxiety-response habits were induced in the animals by shocking them repeatedly in a small cage. The animals thereby developed a permanent habit of anxiety response in the cage and also habits of less intense anxiety in the experimental laboratory and in rooms that were physically similar to it. These reactions proved to be indefinitely persistent without any further shocks. They showed no sign of weakening no matter how often or for how long an animal was exposed to the experimental cage or room. However, they could be weakened and ultimately removed if the animal could be induced to eat repeatedly in the presence of anxiety-evoking stimuli. Since the animal's eating was completely inhibited in places where anxiety was strong, the food had first to be offered in a place that aroused anxiety weakly—for example, in a room slightly resembling the experimental laboratory. There, eating would occur and inhibit the anxiety; repeated feedings would diminish it to zero. Then the animal could be fed in successively "stronger" situations, until eventually he would eat without anxiety in the cage where the neurosis had been induced.

As early as 40 years ago, Mary Cover Jones used eating to counter-condition children's phobias, and recently her method has again been used for treating children. There are other reciprocal inhibition techniques that are more readily applicable to adults.

Assertive Responses

Where the patient has neurotic fears in interpersonal interchanges, for example, if he is overapologetic or afraid to ask for

what is rightly his—like the repayment of a loan—he is encouraged to express what he really wants. This is what is meant by assertive behavior. It includes not only responses of a more or less aggressive nature, but also others, expressing affection, liking, admiration, revulsion, and almost any other feeling that is in accordance with the individual's emotions, *other than anxiety* (Salter, 1949; Wolpe, 1958). Aggressive kinds of assertion are, however, very commonly required. For example, one often finds patients whom unjust criticism renders hurt and helpless. The therapist applauds the anger and resentment that the patient feels in the situations he inadequately handles and gives detailed instructions for the appropriate expression of these feelings. Such expression reciprocally inhibits the anxiety, and repetition brings about a progressive conditioned inhibition of it.

Sexual Responses

These are employed to overcome habits of anxiety inappropriately evoked in sexual situations. The patient usually complains of impotence or premature ejaculation, both of which are generally due to anxiety that interferes with the predominantly parasympathetic responses that subserve penile erection. The emotional components of the sexual response (sexual feelings) usually remain adequate. The therapist, having ascertained at what stage in the sexual approach anxiety begins to be experienced, instructs the patient (who must have secured the cooperation of his sexual partner) to take his sexual approach no further than this stage of minimal anxiety on repeated occasions—until the anxiety has decreased to zero. He is then directed to go on to the next stage in the same way. Advances continue to be made in a stepwise manner, until normal intercourse is achieved. In a recent series of 31 cases, 87 per cent of the patients recovered functionally in a mean time of eight weeks (Wolpe and Lazarus, 1966).

Systematic Desensitization Using Deep Muscle Relaxation

Edmund Jacobson (1938) was the first to show that deep muscle relaxation can reverse the autonomic responses characteristic of anxiety. He treated neurotic patients by giving them very extensive training in relaxation, and then instructing them to relax at all times all muscles not in use (differential relaxation). A rather similar method has been proposed by Schulz in Germany (1959). It would appear that when improvement occurs it is because persistent relaxation provides the possibility of reciprocal inhibition

of anxiety aroused by stimuli that are encountered in the course of daily life.

There is another and much more efficient method of using deep muscle relaxation to decondition neurotic anxiety. This is known as *systematic desensitization* (Wolpe, 1954, 1958, 1961; Wolpe and Lazarus, 1966). It can be used to decondition all neurotic anxieties of a phobic or phobia-like kind. Training in deep muscle relaxation occupies only about 15 minutes of each of about six sessions. The greater part of these sessions is devoted to listing examples of phobic situations and then arranging them in descending order of intensity of anxiety reaction. The ranked list is called a hierarchy.

In the actual desensitization procedure, the patient is made to relax as deeply as possible and then the least disturbing scene from a hierarchy is presented to his imagination for a few seconds. Presentations are repeated until he no longer has any disturbance, and the same procedure is followed for each ranked situation all the way up the hierarchy. There is almost invariably a transferred elimination of anxiety to the corresponding real situation. In individuals who are not disturbed by imagining situations that disturb them in reality, desensitization requires the exploitation of real stimuli, being then called "desensitization *in vivo*."

Other Modes of Systematic Desensitization

Other inhibitors of anxiety may also be employed therapeutically in a systematic way.

(1) An anxiety-inhibiting effect is produced by the emotions spontaneously aroused in some patients by the therapeutic situation itself (see below). In behavior therapy this has been used mainly for desensitization *in vivo*. For example, in cases of social anxiety characterized by tremor of the hand on lifting teacups, patient and therapist repeatedly raise first an empty glass and then a progressively fuller one, at each stage until all signs of shaking disappear, and later repeat the sequence before an audience.

(2) Lazarus and Abramovitz (1962) have reported the desensitization of children's phobias by the use of what they call "emotive imagery." The patient is made to expose himself in imagination to phobic stimuli of increasing intensity in contexts of pleasant emotional excitement.

(3) Recently, use has been made of the observation that anxiety can be inhibited (and thus deconditioned) by cutaneous stimulation by nonaversive galvanic shocks. This effect is probably based on what Pavlov called *external inhibition*.

(4) Reciprocal inhibition of one component of a response complex by another is the likely mechanism of the technique (Wolpe, 1954, 1958) of inhibiting anxiety through the arousal of a dominating motor response evoked by mild electric current.

(5) Another method of procuring inhibition of anxiety has been to present a neutral stimulus just before the *cessation* of a strong faradic current to the forearm, with the intention of conditioning cessation (inhibition) of anxiety to the neutral stimulus (Wolpe, 1954, 1958). This has been called "anxiety-relief" conditioning. The stimulus so conditioned is later used to inhibit neurotic anxiety.

Avoidance Conditioning

Avoidance (aversive) conditioning is an application of the reciprocal inhibition principle to the overcoming of undesirable responses other than anxiety. It has been employed largely to treat obsessional behavior and drug habits. The agents most used have been strong faradic stimulation of the forearm, and drug-induced nausea, either of which must closely follow the stimulus to which avoidance conditioning is desired. Ways of inducing aversion by means of imaginary aversive events have recently been described independently by Dr. Joseph Cautela of Boston and Dr. A. Drooby of Beirut.

It is worth noting that, in addition to the elimination of neurotic autonomic habits based on reciprocal inhibition, the conditioning of motor habits (operant conditioning) also takes place during some of the procedures that I have described. For example, when the expression of angry feelings inhibits interpersonal anxiety, the *motor habit* of assertion in the relevant situation is at the same time reinforced by favorable consequences of the assertive activity—anxiety reduction and social success immediately, and the approval of the therapist later.

What Are the Clinical Achievement-of-reciprocal-inhibition Techniques?

To date reciprocal inhibition techniques have been used predominately to treat neuroses, and in these they have appeared to be very successful. There have been a few reports of their utility in overcoming disturbed reactions to delusions in some cases of schizophrenia. Even though the true value of a technique can only be judged through properly designed comparative studies, clinical experience is also evidence, and when it is uniformly in one direction, it has considerable weight.

I think it is true that everybody who becomes reasonably adept at reciprocal inhibition techniques becomes aware of a surprising ability to bring about change in most neurotic patients. He finds that he can decide which unadaptive habits to treat at a particular time, and also the means to be used; I have demonstrated that in the desensitization of classical phobias there is a mathematic relationship between number of scene presentations and amount of decrement of the phobia.

Many reports of the treatment of individual cases and small groups have been published. One might easily be tempted to ascribe significance to the fact that never before in the history of psychotherapy has so much success been obtained by so many therapists with so little effort. Arnold Lazarus and I, between us, have reported our personal results in over 600 unselected patients, and we have found that almost 90 per cent of patients who submit to the techniques either recover or improve markedly. Among my own patients the mean number of interviews has been about 30. The percentage of recoveries is much greater than that obtained by psychoanalysis (Brody, 1962), but the relatively small number of sessions is a more noteworthy feature. Follow-up studies on successful cases have shown no symptom substitution and very few resurgences, and all of the latter that could be investigated have been found to be reconditionings of neurotic habits, and not relapses in the accepted sense.

What Are the Urgent Research Questions?

It is of the greatest practical importance to perform controlled outcome studies, for these alone can demonstrate whether our clinical impressions of the superior merits of behavior therapy are valid. Some excellent investigations involving the desensitization technique have already been done by Gordon Paul of the University of Illinois and Peter Lang of the University of Wisconsin. The findings so far have all been strongly in favor of conditioning methods. Dr. Paul found that psychoanalytically-oriented therapists obtained much better results with systematic desensitization than with their own insight therapy. We need more such studies that illuminate sharply-defined sectors of this problem, but we also need controlled clinical comparisons of the effects of behavior therapy with those of other therapies in complex cases of neurosis. We also need to forage for more methods, for we still do not always have the means to inhibit the reactions we wish to abolish.

The mechanisms of therapy also require study. It has not even

been adequately demonstrated that the changes achieved in reciprocal inhibition therapy really depend upon individual inhibitions of anxiety responses according to the manner hypothesized. An investigation to clear up the matter has been designed. The study of habit decrement on the basis of reciprocal inhibition also should receive much more attention from experimental psychologists.

We may expect that in the coming decade behavior therapy will supplant the imprecise and sometimes mystical approaches that today hold sway in the psychotherapeutic field, but by the end of that period behavior therapy practices will probably themselves have been transformed by the tide of research that is now beginning to rise.

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