Systematic Desensitisation

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Counselling Methods

for Dr. Noel Howieson

An excellent piece of work Don. It answers all the questions posed fully and efficiently. It was well planned + executed.

well done.

A.

A competent presentation -
Clear Concise 7.5

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1. Introduction

Systematic desensitisation is a therapy in which therapist and client work together to achieve a common goal, usually the alleviation of anxiety. The process uses imagined anxiety-causing scenes and self-managed relaxation techniques. Systematic desensitisation has many advantages in alleviating phobias. There is a clearly defined focus and well defined techniques which rely on explicit behavioural theories of learning(Coleman, 1986). The therapy may occur in any quiet environment with individuals or groups. Minimal preparation is needed since any scene can be created in the imagination. Graduated hierarchies of feared visualised events permit minimal discomfort, particularly when anxiety levels are too high to confront issues directly. The technique has proven efficacy in time and cost in removing anxieties when direct action may not be possible. Often only five or six sessions are required(Wachtel, 1977).

2. Historical Evolution of Systematic Desensitisation

The development of systematic desensitisation as an behavioural therapy has largely occurred in the last thirty years. Initially, following Pavlov's experiments with animals into abnormal behaviours, Watson and Rayner (1920, quoted in Lavigna, 1986) reported that fear or anxiety could be learned or conditioned in response to environmental stimuli. They demonstrated this theory by causing a frightening loud noise every time little Albert reached for a white rat leading to a conditioned fear of rats. Watson suggested that the fear could be overcome by rewarding the child in the presence of the feared object.

Mary Cover Jones (1924, in Lavigna, 1986) demonstrated that a boy's fear of a white rabbit could be weakened by exposure of the rabbit to the boy when he was eating.

Rimm and Masters (1979) suggest that the delay in the practical applications of these ideas was due to the domination of therapy by psychoanalytically oriented psychiatrists until after the Second World War. Then, in 1948, with the popularity of clinical psychology, Joseph Wolpe extended this idea by reducing the conditioned fear of cats towards shocks given through the floors of their cages by feeding them in environments which progressively resembled their cages. In essence, fear or anxiety was weakened by evoking an incom-

patible response while presenting the fear stimulus.

In 1958 Joseph Wolpe (1958) introduced a reciprocal inhibition theory to behavioural therapy, outlining clear, simply applied procedures for alleviating specific anxieties in humans. Using theories derived from Edmund Jacobsen in 1938, the process utilised deep muscular relaxation as a counter conditioning influence on anxiety.

The theory was based on desensitisation, that it was difficult to be anxious and relaxed at the same time. As Wolpe (1958, p. 71) stated, "if a response antagonistic to anxiety can be made to occur in the presence of anxiety-evoking stimuli, the bond between these stimuli and the anxiety responses will be weakened." By learning to relax consciously, anxiety could be overcome. Such a counterconditioning theory was based on the earlier learning theories of Pavlov, Hull and Miller(Kazden & Wilson, 1978).

By the 1970's rapid change and insecurities in society had led to enhanced interest in therapies. Eight journals and numerous textbooks dealing with behavioural therapy were being published, behavioural therapy associations had been formed, and conferences hosted. Wolpe's systematic desensitisation therapy was well established. Numerous comparative studies by then had demonstrates the strengths and weaknesses of the process while other research had sought to isolate the reasons for the therapy's success(Rim & Masters, 1979). Between 1983 and 1990 79 research articles on systematic desensitisation being used in education had been reported in the Educational Resources Index Collection (ERIC), while twenty two articles with sociological applications were listed in the Sociofile Bibliographic Index.

3. Philosophical Basis of Systematic Desensitisation

Systematic desensitisation is a neobehaviorist philosophy concerned with habitual behaviours learned through experience, that have caused disabilities. The behaviorist philosophy is empirically oriented, based on a belief in natural laws which may be discovered through experimentation and a scientific approach. The object is to determine the causes of behaviour, based on the belief that behaviour is caused by observable and countable environmental stimuli, whose consequences affect the probability of subsequent

behaviour (Becker, 1986).

The possibility of scientific control is offered by examining the environment to identify those events which cause and maintain behaviours. The therapist rearranges contingencies of reinforcement and punishment. The environment may be rearranged so desirable behaviours are increased and undesirable ones decreased. Removing rewards or reinforcements will lead to the termination or extinction of undesirable behaviour. Inherent in the model is measurement of the effects of intervention.

The model rejects the view that behaviour is caused by forces inside humans such as drives, impulses, internal conflicts or traits. It rejects the traditional medical model that symptoms are used to diagnose an underlying disease. Nor is there need to remove underlying conflicts. Kazdin (1975) notes that the focus is on specific observable behaviour which is assessed in context. Labelling is avoided and deviance is viewed as learned. It is the product of an environment rather than innate within a deviant person. Once deviant behaviours are identified, environmental factors supporting these behaviours are examined and are modified to modify behaviour.

The philosophical basis of Wolpe's (1973) behaviour therapy accepts the behavioural assumption that the scientific method is useful in counselling. But the process is liberalised by utilising internal constructs such as anxiety and covert cognitive processes such as the imagination. Yet it ties these states with reactions to antecedent and subsequent events. The same arousal is found with imagined as with real events. With its concern for external measurable indicators, rigorous inferences and testable hypotheses, systematic desensitisation fits with the behaviorist approach(Davidson & Neale, 1986).

4. Constructs of Systematic Desensitisation and their Definitions

A construct is a hypothetical theory invoked to explain behaviour(Rimm & Masters, 1979). To be useful, it should be predictive.

One of Wolpe's constructs is the existence of an internal state of anxiety. This state is viewed as being caused directly by external stimuli in the environment and may be recognised by self-reports, motor characteristics or external physiological measurements such as elevated heart rate, sweating or high blood

pressure. Consequently, the internal state is accessible to the client and therapist. The state causes sufferers to avoid causes of anxiety or to act negatively. Assessment involves determination of environmental states which cause anxiety.

Does this conflict with statement on previous page?

The model assumes that anxiety can be induced as effectively by imagination as by reality and that anxiety inducing hierarchies could be constructed. There is the assumption that anxiety would generalise up the hierarchy and anxiety alleviated through imagined scenes would generalise to real life. Idiosyncratic 'defensive' strategies and a lack of vivid imagination may undermine these assumptions(Wachtel, 1977).

A second construct is relaxation. This is both a mental and physical state. Mentally, it represents a pleasurable state with freedom from anxiety while physically it is represented by relaxed muscles throughout the body, and slowed deeper breathing and heart rate.

A third construct is counterconditioning or the substitution of one response for another. Wolpe recommends substituting natural or drug-induced relaxation, assertion, anger, eating or sexual responses for anxiety(Goldstein & Foa, 1980). The construct holds that since these responses are the opposite of anxiety, adoption of these responses must necessarily inhibit anxiety. Subsequent research (Gambrill, 1977) has suggested this construct to be a facilitative rather than a necessary condition.

Numerous other constructs are incidentally employed during the therapy session. Cognitive restructuring is used to cause the client to reassess his expectations more realistically, to attribute success internally, to realise that there is no real danger and to recognise the self-defeating nature of one's thinking. This cognitive process is believed to reduce anxiety.

Operant conditioning refers to the verbal rewards and other contingencies given by the therapist to the client immediately following success in facing anxiety causing situations. Such reinforcements cause the client to repeat the behaviour.

The extinction hypothesis suggests that actually facing an anxiety causing situation repeatedly without ill effects leads to the disappearance of the conditioned fear(Davidson & Neale, 1986).

5. Methodology

Two issues of methodology are reviewed, how to apply systematic desensitisation and why the therapy is effective. The systematic desensitisation change model appears below.

1. The therapist initially establishes rapport through generic techniques normally used in counselling such as eye contact, open body language, warm private setting, equality of status and proximity.

2. Assessment of the condition involves ascertaining the conditions in which anxiety is currently being experienced and variables which affect it.

There must be assessment about the potential of clients to imagine anxiety inducing events vividly and to learn to relax themselves through self-instruction(Gambrill, 1977).

There is assessment of the specific events inducing anxiety ascertained by interview or by observation in the natural environment. Specific questions such as these are useful. When did you first notice this reaction? What makes it worse? Are there things that make it less intense? Would you feel more or less anxious if...? The client may be asked to put himself in an anxiety producing situation and to describe what he or she is experiencing or to approach a real situation and verbalise his or her feelings.

Checklists or standardised schedules such as Wolpe's Fear Survey Schedule may be useful.

3. The therapist is now ready to negotiate with the client over plans to change behaviour.

4. An anxiety hierarchy is established based on the relevant dimension. This hierarchy may have from five to thirty scenes depending on the extent of the anxiety. Each scene is graded in equal intervals from minimum to maximum for the client's perception of anxiety increase. For instance, scenes may relate to being alone at home with parents, 5, 10, 15, 20, and 30 minutes travelling distance away.

Wolpe (1973, in Goldstein & Foa, 1980) recommends establishing a scale of subjective units of discomfort between 0 and 100 or from relaxed to extremely anxious. The client may use this scale to gauge the discomfort caused by each imagined scene in the hierarchy.

5. The client is taught relaxation techniques by tensing and relaxing major muscle groups through the body with suggestions of warmth, relaxation and calmness. Deep breathing may be used as a coping strategy. With practice the subject learns to use these skills independently. Techniques should be practised at home for fifteen minutes a day(Goldstein & Foa, 1980).

6. The client is asked to imagine an anxiety producing situation beginning with one at the bottom of the hierarchy, and to relax. There is systematic repeated practice in pairing visualised feared situations, with relaxation processes, along with instructions urging feelings of success. As the client succeeds in imagining feared events without anxiety, more difficult situations in the hierarchy are attempted. If the client fails, he or she signals to the therapist, who again uses relaxation processes. Each session is commenced and terminated with a scene arousing no anxiety.

In cases where it is practical real situations may replace imagined ones to avoid the need for generalisation from imagination to reality. Actual exposure has been found to be more effective than imagined exposure(Gambrill, 1977).

Most therapy sessions are about a half hour, occurring once or twice a week with six to twenty sessions in total. Homework is provided between sessions and may be assisted by recent research (Chandler *et al*, 1988). This research has has pointed to the success of generic systematic desensitisation computer programmes for interactive systematic desensitisation, including goal attainment scaling.

f resistance is encountered Wolpe and Ascher (1976) recommend systematic switching of techniques hrough a logical succession of treatments such as flooding, modelling and differential relaxation approach- rather than analysing reasons for the resistance.

easons for the success of systematic desensitisation vary. Wolpe (1958) attributes the process to counter- nditioning. Other psychologists have pointed to the extinction hypothesis, being success in approaching xiety stimuli per se. Rachman (1968, in Wachtel, 1977) suggested that subjects rapidly became accus-

tomed to events which no longer proved aversive.

Other processes include contingent reinforcement of bold responses, cognitive relabelling, or developing skills in self-control and management(Goldfried & Davison, 1976). Bandura (1969, in Wachtel, 1977) found that relaxation was a facilitative but not necessary factor while rehearsal of a graded hierarchy was unnecessary. Exposure to real situations was more effective. Kazdin and Wilcoxin (1976, in Altrocchi, 1980) found that neither reciprocal inhibition or relaxation was necessary for systematic desensitisation to work.

Keys for success were said to be expectations of success, actual experience in facing feared situations and improvements in self-concept(Altrocchi, 1980).

Davidson and Neale (1986) note that the reasons why the technique works are still unknown.

6. Research Evidence of Efficacy

Kazdin and Wilson (1978) in an evaluation of comparative studies of systematic desensitisation with other behaviour therapies found that "insufficiently discriminating and inadequate methodology have characterised traditional outcome research"(p.61). Use of different therapists for different treatments confound the effects of the treatments with the relative skills of the therapists.

Clients are often student volunteers and are young, intelligent, successful and middle class with a favourable prognosis regardless of treatment. Generalisations from such samples to populations lack external validity.

Comparative studies often utilised unequal procedural parameters amongst treatments such as duration, number of sessions per week, and date of follow up. Control groups were missing or inadequate and usually lacked an attention placebo control group.

Frequently information was lacking on specific methods, times or personnel used raising questions about the uniformity of the therapies. In many cases use of many treatments obscured identification of the critical feature which caused the behavioural change. Sometimes a number of features may have acted in synergy to produce outcomes unachievable by single factors. Clinical ratings were often not blind to the

treatments and reflected biases and lack of reliability. Most studies lacked long term follow up, over six months although short term change is clearly easier than maintaining long term change.

An example of a weak study is Wolpe's (1958) claim that systematic desensitisation cured or improved 90% of 210 neurotics. The study demonstrated sampling bias in choice of clients and lacked a control group. All dropouts were excluded, although it is known that those who drop out are least likely to improve.

Sound designs require the same therapists for both treatment groups, large numbers of clients randomly selected from the target population, and random assignment of clients to groups. There must be control groups, equivalent treatment parameters, limited subject attrition, and long term such as one year follow up. A variety of ratings including real life observation, self-report, and physiological reactions are needed.

The definitive study was undertaken by Paul (1966) who compared systematic desensitisation with insight oriented psychotherapy and utilised attention placebo and "waiting list" control groups. The attention placebo group was exposed to a pill and boring taped sounds which they were told were relaxing. The same insight oriented therapists ran both insight oriented and systematic desensitisation treatment groups. Subjects were randomly assigned to three treatment groups. All groups ran five sessions.

Paul (1966) found that systematic desensitisation led to a significantly greater decrease in anxiety after public speaking on self-reports of distress, on blind behaviour ratings of performance, and on physiological measures of pulse rate. Paul (1966) attributed the superiority of systematic desensitisation to a more focussed exposure of subjects to clues of prime importance. Systematic desensitisation was an "effective and efficient way of reducing a kind of anxiety"(Paul, 1966, p. 148).

Systematic desensitisation was found to have persisted the most in a two year follow up(Paul, 1967).

Melanson (1986) in a doctoral thesis found self-statement modification more effective than systematic desensitisation in alleviating speech anxiety. Fifty three university students were randomly assigned to four treatment groups including an attention placebo control group. Four, two hour sessions were proceeded and followed by assessments using self-report and physiological measurements. A five week follow up

session confirmed these results.

Watson and Dodd (1983) randomly assigned 52 individuals with communications anxiety to one of three treatment groups, rational emotive therapy, systematic desensitisation, or building communications skills. Pre and post tests revealed a decline in anxiety for all groups after a four month period with no significant differences between groups. The study may have been biased by achievement rising to meet student or teachers' expectations (Pygmalion Effect) or positive change as a result of attention (Hawthorne Effect) since no control group was utilised.

Watson (1988) also alleviated public speaking apprehension amongst 19 university students through six systematic desensitisation audio tapes, spaced a week apart. Students practised muscular relaxation with visualisation activities and were pre and post tested with the Personal Report of Communication Anxiety-24. Significant differences in pre and post tests were found and the students claimed to have improved their ability to control anxiety when speaking , and to speak more often. The study was again marred by lack of a control group, lack of random selection of participants and no long term follow up.

A recent study by Hekmat *et al* (1984) also found systematic desensitisation effective in reducing speech-anxiety physiological and behavioural symptoms in thirty clients as compared with an attention placebo and waiting list control groups.

A meta-analysis of anxiety treatment techniques for public speaking(Allen, *et al*, 1989) has concluded that cognitive modification, systematic desensitisation and skills training were equally effective in reducing public speaking anxiety. Ayers and Hopf (1987) also found systematic desensitisation equal with visualisation and rational emotive therapy in reducing communication apprehension. These conclusions support Altrocchi (1980) who suggests that major psychotherapies have equal effectiveness in problem solving because they all alter demoralisation through persuasion to build confidence in problem mastery.

In a substantial review of the systematic desensitisation literature, Kazdin and Wilcoxon (1976, p. 730) concluded that "systematic desensitisation is well established, and few individuals ... can question the

overwhelming data in support of its efficacy."

7. Problems For Which Systematic Desensitisation Are Best Suited

Goldstein and Goa (1980) and Wolpe (1973) suggest that the technique is ideal for neuroses. These cause anxiety reactions about dangers that have little basis in reality and which present the minimal of danger. Systematic desensitisation removes this anxiety. The technique is successful as well with specific phobia where aversive stimuli are easily discovered. When simple mistakes concerning possible dangers are present, these should be corrected with accurate information without the need for systematic desensitisation.

Some examples in which systematic desensitisation has been found useful in the last ten years in education include these: dealing with fear and anxiety in a school setting (Morris & Kratochwill, 1987), reducing reading anxiety (Bradley & Thalgott, 1987), test anxiety (Crouse, 1985), fear of the dark, (Giebenhain & O'Dell, 1984), writing phobias, (Johnson & Shenoy, 1982), mathematics anxiety, (Trent, 1985), communications anxiety (Watson, 1988), death education, (Bohart & Bergland, 1979), and fear of outdoor adventure activities, (Ewert, 1989).

I believe this is true

Davidson and Neale (1986) report that systematic desensitisation does not work with nonspecific or generalised anxiety, being fears that are so vague that people cannot be confronted with a real life situation.

Lavigna and Donnellan (1986) report that the *in vivo* technique is less effective with mentally handicapped learners. They suggest that the method is ineffective with very young children or people with limited verbal, imaginative or cognitive skills. They quote Firestone, Waters and Goodman (1978, in Lavigna & Donnellan, 1986) who question the extent to which IQ, verbal, cognitive or social deficits may limit the effectiveness of the approach.

8. Conclusion

Systematic desensitisation has been found to be a well established therapy for dealing with anxiety causing neuroses that may be clearly identified. Its well defined focus and techniques has made it the treatment of choice for reducing anxiety.

Historically, the treatment was popularised by Joseph Wolpe in 1958 based on previous research conducted by behaviorist scientists in the 1920's and 1930's and has been increasingly popular to the present.

Philosophically, the therapy was behaviorist in its belief that repeated maladjusted behaviours are learned through experience and may be changed by reversing the learning. Well established learning principles such as counterconditioning, habituation, extinction and operant conditioning underpin the theory and these constructs have been verified by repeated experimentation.

The model involves establishing rapport, accurate assessment of the condition, and construction of an anxiety hierarchy by the client with scenes graded in terms of minimally to maximally anxiety-inducing capacity. The client is taught muscular relaxation and this pleasant state is paired with imagination of each scene until all anxiety is removed. The skills are practised at home.

Research has shown the technique to be highly efficient particularly when causes of anxiety are limited and can be well defined. Research studies demonstrating this efficiency do suffer from many design and methodological faults, affecting internal and external validity. Chief among these faults is quasi-scientific designs which fail to employ control groups.

Recent successful applications of the research in education include reducing anxiety towards public speaking, reading, mathematics, writing, outdoor education and death and dying. The technique has not been as effective with the mentally retarded, the very young or amongst people with limited imaginative or verbal abilities.

Systematic desensitisation has thoroughly earned its place as a behavioural therapy of importance.

9. Bibliography

Ayers, J. & Hopf, T. (1987). Visualisation, systematic desensitisation, and rational emotive therapy: A comparative evaluation. *Communication Education*. 36(3). 236-240.

Allen, M. *et al* (1989). Meta-Analysis of self-report data on the effectiveness of public speaking and anxiety treatment techniques. *Communication Education. 38(1.).* 54-76.

Altrocchi, J. (1980). *Abnormal behaviour*. N.Y.: Harcourt Brace Jovonovich.

Becker, W. C. (1986). *Applied psychology for teachers*. Chicago: Scientific Research Associates.

Bohart, J. B. & Bergland, B. W. (1979). The impact of death and dying counselling groups on death anxiety in college students. *Death Education. 2(4).* 381-391.

Bradley, J. M. & Thalgott, M. R. (1987). Reducing reading anxiety. *Academic Therapy 22(4).* 349-358.

Chandler, G. *et al*. (1988). The effectiveness of a generic computer programme for systematic desensitisation. *Computers in Human Behaviour* 4(4). 339-346.

Crouse, R. H. (1985). Desensitisation for students with different sources and experiences of test anxiety. *Journal of College Student Personnel. 26(4).* 315-318.

Coleman, J. C., Butcher, J. N. & Carson, R. C. (1984). *Abnormal psychology and Modern Life.* (Seventh Edition) Dallas: Foresman and Co.

Davidson, G. C. and Neale, J. M. (1986). *Abnormal psychology*. New York: John Wiley.

Ewert, A. (1989). Managing fear in the outdoor experiential education setting. *Journal of Experiential Education. 12(1).* 19-25.

Gambrill, E. (1977). *Behaviour modification*. London: Jossey-Bass.

Giebenhain, J. E. & O'Dell, S. L. (1984). Evaluation of a parent training manual for reducing children's fear of the dark. *Journal of Applied Behaviour Analysis. 17(1).* 121-125.

Goldfried, M. R. and Davison, G. G. (1976). *Clinical behavioural therapy* N.Y.: Holt Rinehart & Winston.

Goldstein, A. and Foa, E. B. (1980). *Handbook of behavioural intervention*. Toronto:John Wiley & Sons.

Hekmat, H. *et al*. (1984). A paradigmatic intervention approach to anxiety disorders. *Journal of Clinical Psychology. 40(2).* 463-466.

Johnson, C. H. & Shenoy, R. S. (1982). Role-reversal and systematic desensitisation in the treatment of a writing phobia. *Perceptual and Motor Skills. 55(1).* 255-259.

Kazdin, A. E. (1975). *Behavioural modification*. Homewood, Ill.: Learning Systems.

Kazdin, A. E. & Wilcoxon, L. A. (1976). Systematic desensitisation and nonspecific treatment effects: A methodological evaluation. *Psychological Bulletin*. 83, 729-758.

Kazdin, A. E. & Wilson, G. T. (1978). *Evaluation of behaviour therapy*. N.Y.: Ballinger Publishing Co.

Lavigna, G. W. & Donnellan, A. M. (1986). *Alternatives to punishment*. New York: Irvington.

Melanson, D. C. (1986). *Applied self-statement modification and applied modified desensitisation in the treatment of speech anxiety.* Ph D Dissertation, University of Ottawa. (ERIC Document Reproduction Service. Document Number 294252).

Morris, R. J. & Kratochwill, T. R. (1987). Dealing with fear and anxiety in the school setting: Behavioural approaches to treatment. *Special Services in the Schools. 3(3-4).* 53-68.

Paul, G. L. (1966). *Insight versus desensitisation in psychotherapy.* Stanford: University of Stanford Press.

Paul, G. L. (1967). Insight versus desensitisation in psychotherapy two years after termination. *Journal of Consulting Psychology.* 31, 333-348.

Rimm, D. C. and Masters, J. C. (1979). *Behavioural therapy* New York: Academic Press.

Stumphauzer, J. S. (1973). *Behaviour therapy with delinquents.* Springfield, Ill.: Charles C. Thomas.

Trent, R. M. (1985). *Hypnotherapeutic restructuring and systematic desensitisation as treatment for writing anxiety.* Paper Presented to the Annual Convention of the Southwestern Psychological Association. (ERIC Document Reproduction Service. Document Number 260325).

Wachtel, P. L. (1977). *Psychoanalysis and behaviour therapy.* N.Y.: Basic Books.

Watson, A. K. & Dodd, C. H. (1983). *Alleviating communication apprehension through rational emotive therapy.* Paper presented at the Annual Meeting of the Eastern Communication Association, Ocean City, April, 1983. (ERIC Document Reproduction Service. Document Number 230988).

Watson, A. K. (1988). *Effects of systematic desensitisation in the alleviation of communication apprehension.* Paper presented at the Annual Meeting of the Eastern Communication Association, Baltimore, April, 1988. (ERIC Document Reproduction Service. Document Number 297399).

Wolpe, J. (1958). *Psychotherapy by reciprocal inhibition.* Stanford: Stanford University Press.

Wolpe, J., Jourard, S. & Levin, H. (1973). Behaviour therapy: A humanitarian enterprise. *Cornell Journal of Social Relations. 8(1).* 18-46.

Wolpe, J. & Reyna, L. J. (1976). *Behaviour therapy in psychiatric practice.* N.Y.: Pergamon.

Wolpe, J. & Ascher, L.M. "Outflanking resistance in a severe obsessional neurosis" in Eysenck, H. J. (1976). *Case studies in behaviour therapy.* London: Routledge & Kegan Paul.

Yates, A. J. (1970). *Behavioural therapy.* New York: John Wiley.