PROCEDURAL ISSUES IN THE SYSTEMATIC DESENSITIZATION OF AN AIR-TRAVEL PHOBIA

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This paper describes a case in which gross anxiety responses to flying were extinguished following a format which may be described as a variant of Wolpean systematic desensitization. Pre- and post-therapy MMPI profiles pointed to a significant lessening of longstanding psychopathology. Several new treatment techniques were described which appear to the author to warrant further study.

SUBJECT AND HISTORY

The client, an unmarried, 28 year old female was born and raised in the Auckland area. She recalled having been extremely nervous about travelling in boats since childhood and from the age of 21 she suffered a progressively growing degree of anxiety when required to travel by air.

On completion of 6th form she was accredited with University Entrance, attended a Teachers' Training College, and on graduation worked in Auckland for one year while still living at home. In 1968 she moved to Southland where she worked for a little over a year at which time she returned to Auckland. While there she developed asthma, a condition which had not bothered her since pre-adolescence. While visiting Auckland during the 1969 Christmas holidays the asthmatic symptoms again reappeared. During that same year the client took up residence in Dunedin where she has lived to the present.

When she attempted to go to Auckland on a visit in 1970 the client found that her fear of both aeroplanes and boats had grown to such intensity that she could not set foot on either and she was thus effectively marooned on the South Island. She reports that this was an extremely depressing turn of events and a year later as a result of a discussion with her General Practitioner arrangements were made for a psychiatric consultation. The presenting complaint was the air and boat phobias which prevented her from returning to the North Island.

Based on his interviews the consultant arrived at the following formulation of the problem:

> The symptoms represent anxieties about other aspects of her life. She finally agreed fully that even if she had a 'cure' of the symptoms of which she complained, she would not be sure she wanted to go to the North Island. She has very great difficulty in expressing any feeling whatsoever and a tendency also to rationalise her behaviour . . . You will know that she does a great deal of moving from place to place and job to job, which is really a way of avoiding emotional involvement and upset. It is also about moving from place to place that her presenting symptoms revolve . . . The patient's greatest problem is in relation to her mother . . . I believe that the fact that she has asthma every time she goes home, but not otherwise, is also significant; another example of not being able to let anything (feelings or air) out.

Following the psychiatric evaluation the client received out-patient treatment for depression from the same psychiatric practitioner whose later report said in part:

> . . . I saw her for some six months at varying frequencies depending on her degree of distress . . . On the average (of) once a fortnight. I was not optimistic about her response to medication, and conventional psychotherapeutic approaches were demoralising for the therapist. Very long periods were spent in silence that were both anguished and hostile.

It is pertinent to note that I had judged her phobia of flying to be quite symptomatic and relatively unimportant.

In 1972 the client's General Practitioner again referred her for psychiatric help, this time to the Department of Psychological Medicine at the University of Otago Medical School. Once again she expressed concern at the outset about her phobic condition which had now been a disabling problem for two and a half years. She proved once more to be an extremely difficult, noncommunicative psychotherapeutic subject and after a month of frustrating contact a psychological evaluation, the first ever requested, was sought. The consultation request did not include the client's history or referring complaint. It centred around her current depression and simply asked for a "personality evaluation". The phobic condition was referred to in passing as a peripheral issue. This assessment was the occasion for the author's initial contact with the client.

The Minnesota Multiphasic Personality Inventory was administered and a valid protocol resulted. The following are excerpts from the interpretative report:

> The client is an individual who can be described as generally distrustful of people keeping them at a distance and avoiding

close interpersonal relationships. She questions peoples' motivations, is afraid of emotional involvement with them and tends to be extremely sensitive to anything that might be construed as a demand being placed upon her. While basically insecure and craving attention she finds herself in a constant bind in that as she is distant from others she longs for closeness and as others draw close to her her anxiety level, suspicion, and anger increase to the point where she ends up by alienating her potential intimates. She is totally unaware of this process and her part in it and undoubtedly is quite confused by the fact that she is not liked. A potential therapist would find himself unfortunately in the same position as any other person seeking an intimate relationship with her. Were she to be directly confronted with this idea she would tend to withdraw from the one who pointed it out to her feeling angry, hurt, and closed off . . .

Despite the above rather gloomy picture I do not consider that she is hampered to such a degree that she cannot be worked with on an out-patient basis. Quite to the contrary I think it would be to her advantage to be an out-patient since it would enable her therapist to offer necessary support and reinforcement to an expanding social life. There is no indication of thought disorder here. The client appears fully capable of working and maintaining her day to day affairs.

Psychotherapy with the client needs to be approached with some degree of caution lest overly precipitous probing should result in alienation from the therapist which would be extremely difficult to repair. It would be advisable to avoid an insight-oriented approach in favour of one stressing the practicalities of building social contacts . . .

If the client's fears of aeroplanes and boats are significantly hampering problems the client might be re-referred as a potential candidate for desensitization therapy.

Despite the recommendation the client was hospitalised and remained an in-patient for a period of a fortnight during which time she grew progressively worse. She returned to work and was seen as an out-patient with the expectation that she would be transferred to another psychiatric setting for a longer in-patient stay. The hospitalisation in the other institution lasted less than a fortnight. The client took an instant dislike to the regime there and discharged herself.

She reapplied for service at the Department of Psychological Medicine in 1973 and was again hospitalised for treatment of depression. She again responded poorly to in-patient treatment, was considered an extremely difficult patient; demanding, dependent, and exquisitely sensitive to any sign of rejection to which she tended to react by withdrawal or suicidal gestures. The profile of a second MMPI administered by the author at this time was found to be almost identical to the original one. The same interpretative statements therefore were considered

applicable. She was gradually weaned away from the hospital and returned to work being maintained on a number of tranquillising and antidepressive medications.

There was a third brief hospitalisation at the Department of Psychological Medicine in 1973, again for depression. Following discharge, despite excruciating dread, the client forced herself to travel by air to Auckland to visit her family. The prospective return flight was so frightening that she consumed a massive quantity of hypnotic, tranquillising, and antidepressive drugs just prior to and during the trip in an attempt to render herself either calm or unconscious. As a result she had to be removed from the aeroplane at her destination and taken to the hospital casualty department where a stomach lavage was performed.

The results of yet another MMPI taken during a fourth brief in-patient stay at the Department of Psychological Medicine conformed to those of the earlier administrations (see Table 1). She was discharged without arrangement for Out-patient Department follow-up. Three months later the author contacted the client at his own discretion and behaviour therapy was begun.

PROCEDURE

As the first stage in the systematic desensitization process a thirty step aeroplane fear hierarchy was drawn up following the method described by Wolpe and Lazarus (1966). Several sessions were then devoted to attempts to teach the client to relax following Wolpean modification of the Jacobson technique (1938). The client consistently reported unremitting muscular tension during these sessions and this approach was finally abandoned in favour of a hypnotic format. A light trance state was induced (Davis and Husband 1931) with accompanying deep relaxation and all of the training interviews were carried out with the client under light hypnosis. Table 2 provides an outline of the therapeutic procedure.

As an aid to visualisation the author obtained pictures of a variety of air craft including a helicopter and the three types of plane currently flown by National Airways Corporation. Interior views included passengers looking out of windows, talking together, reading, and taking refreshments, and pilot and co-pilot working at the control panels. Exterior views showed passengers boarding, and air craft in flight over water, clouds, mountains, and farm land at various altitudes.

N.A.C. provided data on the dimensions and performance of each of their craft as well as seating diagrams. These and the aforementioned photographs were shown to and discussed with the client at appropriate

points during the training process to enable her to most clearly visualise the objects and actions depicted in the hierarchy items. The author undertook to discuss such matters as the relative take-off angles of propeller-driven and jet air craft, wind direction as a determinant of take-off direction, the use of reversing of propeller blade pitch as a braking device, and up drafts and air turbulence to be encountered on landing. He imitated some of the characteristic normal sounds made by aeroplanes such as the motor whine sometimes heard as the undercarriage is let down in preparation for landing, the changes in engine sound made by either changes in propeller pitch or engine speed in speeding up and slowing down, and the crackle that sometimes precedes announcements made by air crew over the intercom system.

The first three desensitization sessions were carried out routinely. Despite earlier indications that all the items in the fear hierarchy were anxiety-loaded to some degree nine of the first 14 visualisations brought about no reactions whatever. The first really significant anxiety response came at that step in which the client was required to visualise boarding a Boeing 737 in preparation for leaving the ground. Although the original hierarchy had simply involved a take-off and smooth flight the client signalled anxiety as she visualised walking through the terminal doors onto the tarmac. Accordingly what had initially constituted two steps had to be broken into 16 component stages from walking through the terminal doors to being airborne.

Anticipating difficulties in neutralising responses to turbulence the client was instructed to visualise the aeroplane maintaining steady flight. At the author's signal she was told that the craft would begin to move about jolting from side to side and bouncing up and down. It was suggested to her that she had complete control over such erratic movement and that as soon as she felt anxiety she could end both the movement and her anxiety by simply lifting her finger. This would instantly return the plane to a level course. While this exercise was in process the flight scene itself was never terminated. The client was initially able to tolerate only 2 sec of turbulence in response to this procedure. After two full sessions and 55 presentations this had been extended to 67 sec. This same technique was repeated when simulated flights in the Viscount were undertaken this time requiring 146 presentations to arrive at non-anxious acceptance of 37 sec of turbulent motion. During simulated Friendship 103 flights 103 presentations over three sessions resulted in significant tolerance of turbulence. Frequent hypnotic suggestions were made that the droning sound of aeroplane engines, representing the power of the aircraft as well as the strength and skill of the pilot, would invoke feelings of calm and security each time they were heard. The entire desensitization process excluding hierarchy construction and relaxation training took 25, one-half hour sessions over a six month period.

RESULTS

Toward the end of the therapeutic process the client was informed that she and the author would undertake a flight together as a graduation exercise. She expressed enthusiasm and shortly after being told this drove independently to the local airport where she spent what she described as a pleasant time observing the activities there.

The actual flight, a trip of 35 minutes duration, was almost without incident. The author had arranged to have the client seated in the very same position she had occupied during her fantasied flights and he reviewed each of the steps in the actual take-off process as he had earlier during the simulated trips. The client eagerly looked from the window and smilingly examined the ground directly below her as the aeroplane made a hard turn. During the return trip one hour later she barely glanced out and then settled down to read. She admitted to a slight momentary tension during the initial take-off but expressed extreme pleasure with the overall result.

A follow-up telephone call three weeks later revealed that the client availing herself of her new found capacity had gone to Auckland, Christchurch, and Wellington to visit various friends and relations. She had encountered significant air turbulence twice during descent which had induced panic lasting approximately five minutes after the planes had landed. In addition she had felt some slight anxiety while awaiting take-off on two other occasions. Nonetheless she was still quite enthusiastic about air travel and stated her intention to fly again as soon as was appropriate, probably to Fiji during her next holiday period.

An MMPI administered at this point showed a significantly different profile than the previous three. The feelings of being alienated, misunderstood, and not part of the general social environment which had earlier characterised the client were no longer in evidence (see Table 1). Also gone were the anxiety, ruminative self-doubt, self-devaluation, and depression which had been part of the clinical picture earlier. The client continued to acknowledge a significant degree of anger toward her family, moodiness, resentment of societal restrictions and dissatisfaction with her lack of affectional ties with men. The overall picture however was that of an individual who, despite continuing difficulties in interpersonal relationships, perceived herself in a decidedly more positive manner. This test finding coupled with the client's direct report of positive feelings about air travel were in keeping with the results of the experiment by Bandura, Blanchard, and Ritter (1968). These researchers noted that the removal of phobic behaviour was accompanied not only by clear-cut changes in feelings about the previously feared situations but that there was a clear-cut reduction in the degree of disturbing responses to a variety of other situations and objects as well.

TABLE 1

MMPI Results Before and After Desensitization

Subtest Scores*

Administration	L Raw	L T	F Raw	F T	K Raw	K T	Hs Raw	Hs T	D Raw	D T	Hy Raw	Hy T
Pretest	6	56	14	72	11	48	11	46	38	86	28	66
Post-test	3	46	12	70	17	59	11	46	30	71	27	64

Administration	Pd Raw	Pd T	Mf Raw	Mf T	Pa Raw	Pa T	Pt Raw	Pt T	Sc Raw	Sc T	Ma Raw	Ma T	Si Raw	Si T
Pretest	30	76	35	53	12	62	39	73	42	80	18	53	39	66
Post-test	33	83	35	53	13	65	33	63	32	64	17	50	32	58

* K corrections are included where appropriate.

TABLE 2

Outline of Therapeutic Procedure

Session Number	Function
1,2	History taking and explanation of desensitization process
3-6	Construction of aeroplane fear hierarchy
7,8	Unsuccessful attempt to teach deep relaxation
9	Assessment of hypnotic potential
10-34	Desensitization training
35	In vivo round trip flight

DISCUSSION

This case serves to demonstrate the lack of reliability of the subjective anxiety scale informally applied during the construction of the fear hierarchy. In this instance the client showed no anxiety responses to a large number of scenes earlier assigned low but positive anxiety values while shortly thereafter demonstrating a far more massive panic response to still other items than would have been expected from their assigned ratings. The author was therefore called on to exercise flexi bility in carrying out the desensitization process abandoning a laboriously established but obviously unusable hierarchy in favour of trial and error exploration of new situational variables.

The procedure designed to decondition the client's maladaptive responses to simulated air turbulence appears to contain some useful elements. Primary among these is its clear-cut economy of time, permitting a much larger number of stimulus presentations than would otherwise be possible within a specified period. The procedure's effectiveness as compared with other techniques however remains to be assessed.

One may only make conjectures as to any specific benefit to the client conferred by the addition of the visual and auditory aids or the provision of information about normal air craft functioning introduced in this case. It has been observed by the author that diffident, inexperienced air travellers are easily disturbed by new sounds and sights encountered en route. When, in response to their questions, air personnel explain that these are in fact normal occurrences the result is frequently visible relief. The possibility was therefore entertained that familiarity with some of the procedures related to flying would contribute to the maintenance of a state of calm in the client at such a time as the phobic condition were relieved.

The long term effects of the desensitization process have yet to be ascertained. It is anticipated that a follow-up contact will be made six months from the date of termination. Based on the many reports of follow-up studies in the literature one would anticipate that barring involvement in a traumatic experience involving flying the reinforcing consequences of further air travel will serve to maintain the gains made.

Paper presented at the annual conference of the New Zealand Psychological Society, Dunedin, August 1974.

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