

THEORY AND PRACTICE

Sequential Analysis: monitoring counselling sessions via skin resistance*

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ABSTRACT *Very little has been published on the application of the galvanic skin response (GSR) to counselling and psychotherapy, since research has concentrated on applications to lie detection and biofeedback. Dr Ian N. Marshall developed Sequential Analysis in 1968-69, as a system of psychotherapeutic procedures monitored by GSR, but most of his work remains unpublished. Certain meter techniques are described. It is suggested that the 'paradoxical' phenomena would be explained by correlating high/low resistance with withdrawal/involvement rather than with relaxation/arousal. The procedures of Sequential Analysis are described briefly. Finally it is suggested that giving oneself sessions is an effective method for training as a counsellor or psychotherapist, because of the experiential understanding of the processes so obtained.*

Background to the use of GSR for monitoring sessions

Skin-resistance meters measure the resistance of the skin to the passage of a very small electric current. It has been known for decades that the magnitude of this electrical resistance is affected, not only by the subject's general mood, but also by immediate emotional reactions. The first paper on the influence of mental conditions on the psycho-galvanometer was written in 1890 by Tarchanoff, and in 1907 Carl Jung published a paper describing the galvanic skin-response in connection with a word-association test in his own psychiatric practice. Words on a list were read out to the patient one by one. Any words which evoked a larger than usual response on the meter were assumed to be indicators of possible areas of conflict in the patient, and these areas were then explored in more detail with the patient in session. Jung used observed deflections on the meter as a monitoring device to aid his own judgement in determining which particular lines of enquiry were most likely to be fruitful with each patient.

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This idea was immediately picked up with enthusiasm in criminology and the meters became known to the general public as 'lie detectors' in spite of the fact that they measure emotional responses and not lies. On the other hand, in psychotherapy little further work was done using the meter for over 60 years, until a paper by Abrams in 1973 entitled 'The polygraph in a psychiatric setting'.

By the 1970s biofeedback research in connection with meditation and relaxation was becoming popular, and so once again there was tendency to ignore the potential application of GSR as a monitoring device in counselling and psychotherapy. There are now hundreds of published papers on GSR biofeedback; there are also hundreds on polygraphs, some supporting the contention that they can be used to detect lies, and others maintaining that they cannot (Lykken, 1981) (see Gale (1989) for an authoritative review). However, since Jung's contributions at the beginning of this century, the really important papers on GSR as a monitoring device in counselling, psychotherapy and psychiatry, can be numbered on the fingers of one hand.

My own work in this field began in late 1967, when I started assisting Dr Ian N. Marshall with his research. He was developing a system of procedures specially suited for use with GSR monitoring, and he chose to call his system 'Sequential Analysis'. The procedures were tried out on me, and then I used them on my own volunteer subjects. The information so gathered, enabled him to modify and refine the system until by 1969 it reached the form in which it is used today. Although we have both used this system extensively since then, he has never published this work except for private circulation.

The meter phenomena

The meter currently used in Sequential Analysis is the *Omega-Two* made by Audio Ltd. (Blundell & Cade, 1979). This meter responds quickly to changes in the client, its appearance is non-threatening, and the palmar electrodes are comfortable (gel is not used). Before discussing Dr Marshall's procedures, it is necessary to describe some of the responses that can be observed on the meters, and their significance in relation to the client's mental and emotional state.

There are two different aspects of skin resistance which are important in this context. One is the reading which measures the client's actual skin resistance, and which will be referred to as 'the basal reading'. It does not need to be accurate; the nearest round number will suffice. In biofeedback research this basal reading has been used as a measure of the client's state of relaxation or arousal.

The second important aspect of skin resistance is the small deflections in its value, observed as rapid flicks of the needle on the meter's dial. It is these small rapid reflections that are the main concern in the context of counselling and psychotherapy. They indicate that meaningful material is just below the client's level of conscious awareness, and is ready to come to the surface; and they occur from 0.5 to 1.25 seconds after the stimulus that evokes them. To give a hypothetical example, suppose that a client recently became angry at the office because his work was criticised by his superior, and the therapist observes quick reads on the meter

whenever the client mentions his superior's tone of voice. The therapist would point out this fact to the client and ask him to say more about tone of voice. The client describes it as critical, loud, harsh and know-all. When he says 'know-all' there is a very large read as he suddenly realizes that it was the boss's attitude of knowing-it-all that was really annoying him in this incident, and not the criticism *per se*. In this way the pursuit of reads, especially large ones, tends to lead to the uncovering of emotionally meaningful material.

There are a number of useful meter techniques, the most basic being (a) selection of the largest read, (b) repetition with feedback and (c) steering. Each of these will now be described briefly.

(a) *Selection of the largest read.* If the client presents a number of apparently different problems all at once, it is possible to select the one on which to work first by observing which produces the largest reads when described. Similarly the therapist can select the most psychologically charged item from a list, e.g. a list of the members of the client's immediate family. This technique is an extension of the method used by Carl Jung (1907).

(b) *Repetition with feedback.* This technique can be lengthy. It starts with the therapist telling the client whether or not there were a read in response to the question asked of him. If there were, then he is asked to say what he considers caused the read. After being allowed to reply (for as long as he wishes), the therapist checks by asking exactly the same question again. This process is repeated as often as necessary, until there is no read. Each time the question is asked, it probes a little deeper, and helps to raise material into conscious awareness. This process is not the same as habituation (familiar to polygraph-users), the difference being that the client offers a fresh explanation each time he is asked the question, and this has the effect of making the question seem like a new one each time. In fact the knowledge that a read has occurred, seems to help raise buried material. This is confirmed by Stern *et al.* (1981) and others. They showed that the read on meaningful material is actually enhanced by feedback to the subject.

(c) *Steering.* Sometimes the client is unable to offer any explanation for a read however hard he tries, in which case 'steering' may be used. This involves indicating immediately every time the same type of read recurs by saying clearly and at once 'there' or 'that' or some equivalent cue. Three or four such indications are usually sufficient to have the effect of jerking into awareness whatever it was that was lurking just below the surface, and the client says "Oh, yes! It's so and so".

There are other meter techniques, but these three are sufficient to demonstrate that GSR-monitoring enables the therapist to choose a relevant line of questioning instead of wasting time with material that leads nowhere. It also assists the client in bringing material to the surface i.e. to conscious awareness.

All the techniques described above make use of the small rapid deflections in

skin resistance which produce little flicks of the needle on the meter's dial. Let us now turn to the basal reading itself. It has long been known in biofeedback research, that meditation and relaxation procedures produce a rise in skin resistance. It has therefore been assumed that high and low skin resistance correlate directly with relaxation and arousal respectively, and that a high resistance indicates a pleasant relaxed state of mind whereas low resistance indicates tension. However the reverse is the case in a psychotherapy session. When repressed material is coming to the surface (for example material associated with guilt), the skin resistance rises and the client experiences feelings of tension; thus in a therapy session situation high skin resistance indicates tension, and not relaxation as in meditation. Then when the repressed material reaches the surface and the moment of breakthrough occurs, there is usually a sudden large drop in skin resistance and the client experiences relief, thus demonstrating a correlation between low resistance and relaxation of tension, again in contradiction to the pattern of research findings in meditation. This apparent contradiction was already noted by Toomin & Toomin (1975). The phenomenon was given the epithet 'paradoxical'; the paradox was not resolved at that time. Seligman (1975) also published a paper on a similar theme.



FIG. 1. The state of arousal of the autonomic nervous system in the form of high/low skin resistance (SR), plotted against the subjective experience relaxed/tense. (...) Relaxation techniques; (---) Sequential Analysis.

In order to resolve the paradox I suggest that it would be more comprehensive to correlate *high* and *low* skin resistance, not with 'relaxation' and 'arousal', but with '*withdrawal*' and '*involvement*' respectively; both these terms can refer either to a relaxed or to a tense state (see Fig. 1). *Withdrawal* is relaxed when it means detachment from worldly cares, as in meditation; and withdrawal is tense when it means inability to confront repressed material (as in guilt, for example). *Involvement* is tense when it means anxiety, and is relaxed when it means enhanced

awareness, such as occurs with a flash of insight or the sudden clearing away of the blockage caused by repressed material. A paper by Svebak & Stoyva (1980) entitled 'High arousal can be pleasant and exciting' and based on the theory of psychological reversals, seems to bear out this suggestion.¹

Sequential Analysis

GSR-monitoring can be used with any cognitive therapy which aims at insight and increased awareness. Sequential Analysis, however, was specifically designed to be used with a GSR meter, and consequently its procedures take full advantage of all the various meter techniques which are available.

The human psyche is not orderly. The material evoking one read, can have ramifications linking it to the material evoking another read. If the therapist is not to become confused and let the session deteriorate into a shambles, then he/she has to keep a clear head and be methodical even if the client is not.

As far as possible, one type of problem is dealt with at a time. For example one session or series of sessions may be devoted exclusively to feelings of guilt. Another session may be devoted to feelings of loss, ranging from loss of a favourite childhood toy right through to bereavement. Of course, it is not possible to keep such areas rigidly apart. There is bound to be some overlap; but each session has its main theme which is pursued in depth until a therapeutically releasing insight occurs, or a new awareness dawns of sufficient import to give the client a healthier perspective within that particular theme. Any material from another theme that overlaps into the session, is handled as if with first aid in order to defuse it temporarily, and then it is set aside for deeper consideration at some future time, thus enabling the main theme of the session to be resumed.

Each main theme has its own procedure or set of procedures. This will be illustrated by quoting here in full the basic procedure for dealing with 'Feelings of Antagonism'. Many people find that their own anger and ill-will leave them afterwards with a very unpleasant feeling every time they recall the relevant incident. This clouds their judgement, not only at the time, but also for a long time afterwards. It is desirable, therefore, to resolve those feelings.

The procedure on antagonisms starts with asking the client to identify a person towards whom he has antagonistic feelings, and the occasion which generated them. Then eight specific questions are asked, each one being dealt with by the method of 'repetition with feedback' until there is no read. The eight questions are:

Was your antagonism caused by:

- (1) Something you were forced into?
- (2) Something you didn't achieve?
- (3) Something you found?
- (4) Something you felt was missing?
- (5) Something someone supposed?
- (6) Something someone didn't grasp?
- (7) Something you wanted to keep secret?
- (8) Its reminding you of something else?

Hopefully at some point a submerged memory will be jerked up into conscious awareness by this probing, and the client will have an insight giving him a fresh perspective on the incident. It may be necessary to go through the list a second or even a third time before the antagonism is cleared. Sometimes the antagonism just peters out, in which case probably the client's attention has shifted to another incident loaded with antagonism and now needing the same treatment.

This procedure can be illustrated with the following example of one of my own clients, a man of 21 whom I shall call Jim. He came to one of his sessions in an angry mood, which had to be resolved before we had any hope of making progress. It transpired that while he had been with his girlfriend Mary at her flat, she had been telephoned by another young man, David, with a view to chatting her up. David was not only Jim's best friend; he was also apparently an incorrigible seducer. Over the telephone David asked Mary not to reveal to Jim that it was he who had called her. But she did eventually tell Jim, who understandably became very angry. In the session we went through the eight questions twice, getting a few minor insights, but no real relief from the feelings of anger. During the third time round, in answer to the first question (*something you were forced into?*), he said he was forced into asking her who it was that had telephoned. He then revealed that at first she had pretended that the call came from a girlfriend. At that point Jim suddenly realised that the cause of his anger was not that David was trying to seduce Mary behind his back, but that David deliberately caused Mary to try to deceive him (Jim). At this point there occurred the big drop in skin resistance that normally accompanies an insight, and it was followed by the smooth flowing needle motion, completely free of reads, that characterises the moments immediately following a therapeutic release. At the same time he said *'I don't feel antagonistic any more. I am fed up with being antagonistic'*. After a slight pause and some laughter we were able to proceed with the session proper.

Sequential Analysis has many different procedures for dealing with a wide variety of themes. There are procedures for guilt feelings, fixed patterns of response in certain situations, past traumatic events, feelings of loss, suppression due to other people's standards, self-images, and so on. Each theme has its own particular procedure or set of procedures.

The training of counsellors and psychotherapists

Because Sequential Analysis has standard formalised procedures, and because of the presence of a means of objective assessment (the meter), it is possible to give oneself sessions by being both therapist and client. This gives immediate first-hand experience of the correlation between observed meter phenomena and the associated subjective experiences in a session. This in turn enables one to acquire an understanding of the mechanisms of the psyche—an understanding which could probably not be obtained in any other way. The awareness so obtained is invaluable to a counsellor or psychotherapist. For this reason Sequential Analysis is a valuable method of training, even if there is no intention of using these particular techniques and procedures in therapy when trained. The experiential understanding of mental

and emotional processes obtained when giving oneself a GSR-monitored session, is of value no matter what one's particular orientation as a therapist may happen to be.

Note

1. More recently Thayer (1989) distinguishes between energetic arousal and tense arousal.

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