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Signal and Noise in Psychotherapy

The Role and Control of Non-specific Factors

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Four major categories of non-specific or common factors are systematically analysed: relationship, expectancy, reorganising, and impact factors. The placebo control method should be discarded in psychotherapy research for two reasons: (a) sham treatment controls are unworkable because common factors in treatment are manifest only when real treatment is administered; and (b) the very events which were once thought of as 'non-specific' noise are now recognised as active therapeutic factors common to many schools.

Psychotherapy never seems to merit unambiguous status. The best testimony to its value is still met with doubts about its uniqueness, its effectiveness, or its scientific basis (Brody, 1983; Prioleau *et al* 1983; Shepherd, 1983). The latest doubts spring from students of so-called non-specific factors in therapy. The term 'non-specific factors' has been charged with excessive ambiguity, and alternative terms, such as 'common factors', have been proposed instead (Critelli & Neumann, 1984). We mostly use the original term, however, to mean factors which are not exclusive to a particular therapy.

Interest in this topic originated independently from Jerome Frank's astute comparisons of psychotherapy with folk traditions of healing (Frank, 1961, 1973), and from the methodology of random clinical trials drug research which, applied to psychotherapy, equated non-specific factors with placebo effects (Rosenthal & Frank, 1956). This interest has increased research sophisticiation, but at some cost. It has led to some erroneous debunking of psychotherapy as an effective means of treatment, and to a gratuitous devaluation of the non-specific factors themselves as treatment devices. It has also caused the proliferation of wasted research funds in the pursuit of a methodological chimera – the 'non-treatment' or 'placebo' control. This paper aims to correct these errors.

The attack on psychotherapy via non-specific factors is based on two flawed arguments. The first is the notion that only factors specific to a therapy require scientific inquiry. Non-specific factors, this says, are not derived from any treatment theory and therefore should play only an ancillary role to specific factors in treatment. The second argument says that a treatment's efficacy depends on its outcome test results against a placebo control using non-specific factors only. This paradigm assumes that non-specific factors can be separated from specific factors and applied without an accompanying specific technique (the independence assumption). Some critics conclude from research with this paradigm that all therapeutic effects are placebo in nature (Prioleau *et al* 1983), or that treatment outcome depends so much on placebo effects that psychotherapy does not require professional training (Brody, 1983).

The overvaluation of specific effects and the unrealistic methodology that comes from it are both relics of a previous era, dominated by sectarian claims of therapy schools to having uniquely effective methods. Interest in non-specific factors, on the other hand, has gone through several historical phases. In the first, only specific factors were deemed important to treatment. Non-specific factors were to be filtered out by placebo controls (Rosenthal & Frank, 1956). Then, non-specific factors were recognised as crucial to both psychotherapy and traditional healing (Frank, 1961). Next, non-specific factors were 'professionalised', that is, they became intentional elements of treatments that had once neglected them, and therapists were explicitly trained in them (Strong & Claiborn, 1982; Patterson, 1985; Karasu, 1986; Omer, 1986, 1987). Now, placebo controls are coming to be seen as irrelevant to evaluation of psychotherapy's efficacy, since non-specific factors are not noise to be filtered out of 'real' treatment, but are important signal events in it. Some who take this position argue that non-specific factors *should not* be controlled for in efficacy studies (Kirsch, 1978; Wilkins, 1979, 1983; Parloff, 1985; Horvath, 1987). Our analysis goes a step further and argues that no-treatment or sham-treatment groups *cannot* serve as adequate controls for efficacy tests.

Our analysis of the literature on four major groups of non-specific factors in psychotherapy (relationship, expectancy, reorganising, and impact factors) shows

in each case that the independence assumption is unwarranted, that sham-treatment controls are inadequate, and that non-specific factors function as important signals, not as noise, in the process of psychotherapy. In fact, understanding the non-specific factors offers improved therapeutic technique, new theories linking psychotherapy to social and cognitive psychology (Bandura, 1977; Strong & Claiborn, 1982), and greater dialogue between schools (Goldfried, 1980).

Relationship factors

The development of a special relationship between therapist and client is a common feature of all psychotherapies. It is often seen as a major therapeutic factor in itself, if not the only vital one. Attention-placebo groups are attempts to control for the relationship factor by providing the benefits of a therapeutic relationship without any treatment.

In attention-placebo groups, control clients are given equal therapist *time* in sessions where the actual contents of the interaction are supposedly non-therapeutic. The validity of this control depends on how well the therapist's attention alone represents the therapeutic relationship. Critical scrutiny of three major relationship factors, however, suggests that it depends on specific interventions and is not manifest without them.

(a) *The unconditionally positive relationship.* Contemporary 'experiential' psychotherapy makes the relationship the central vehicle of therapeutic change. It heals by providing a secure atmosphere in which the client is accepted as is, which leads to abandoning the defences which thwart growth and self-revelation (Barton, 1974). The relationship should be free of the therapist's direction or content preferences, and the therapist should be empathic, warm, and genuine. There is evidence that these therapist traits are helpful in all treatments, not just in experiential psychotherapy (Patterson, 1985). If these treatments were indeed non-directive, they might themselves be ideal control groups for therapist attention. But they are not: experiential psychotherapists differentially encourage one or another kind of client behaviour, such as 'introspective feeling' statements (Murray & Jacobson, 1971). In short, the unconditional positive relationship becomes manifest only through specific interventions. Administering sham treatments cannot replace specific interventions because this precludes therapist genuineness. Attention-placebo groups cannot therefore control for the positive effects attributed to a warm and empathic relationship.

(b) *Relationship as vehicle for identification and modelling.* Another view of the therapeutic relationship as a healing factor sees the therapist as a model for the client to imitate or identify with (Frank, 1973, pp. 127–130; Cornsweet, 1983). What is modelled differs from therapy to therapy, but it is generally agreed that therapist models need to be unambiguous (Cornsweet 1983; Messer, 1986). Placebo groups cannot easily control for this non-specific factor, since a faking therapist will probably be less convincing and invite less identification than a genuine one.

(c) *Relationship as therapist power.* Some theorists argue that the seemingly undemanding therapist manner is a means of creating a power differential in the therapist's favour (Haley, 1963; Strong & Claiborn, 1982). Such power is not crude dominance over the client's life, but the capacity to define the roles and rules of the therapeutic encounter (Haley, 1963) and to foster the clients' perception that therapists have the resources to meet their needs (Strong & Claiborn, 1982). Power differential is common to all treatments and is used in ways that cannot be matched by placebo controls. The therapist may, for instance, use control of the relationship to press the client to perform difficult or frightening tasks, such as freely associating or approaching a phobic object, or to make sure that the client will not dismiss a paradoxical intervention out of hand (Haley, 1963; Strong & Claiborn, 1982). Power differential can be used this way when the therapist has clear interventions in mind. Invoking it for irrelevant purposes, however, as in sham therapy, may actually weaken the therapist's power.

In summary, all three relationship factors, contrary to the independence assumption, become manifest only through real specific interventions and cannot be controlled for by groups receiving no (or sham) treatment attention.

Expectancy effects

Expectancy effects occur because clients and therapists expect treatment to be helpful, independently of the specific stratagems used. Expectancy effects are generally recognised as important factors in all treatments (Frank, 1973, pp. 136–164; Shapiro & Morris, 1978). 'Expectancy groups' in which subjects receive a 'highly credible' sham treatment (Borkovec & Nau, 1972) try to control for these effects: in the treatment group, it is thought, outcome will depend on both treatment and expectancy; in the control group, it should be due to expectancies alone. The 'expectancy arousal hypothesis' says that *all* therapy effects are merely expectancy ones (Shapiro, 1981). Convincing expectancy control groups are virtually

impossible to construct, however, and evidence for the expectancy arousal hypothesis is flimsy.

Therapist expectancy effects

Therapists' positive attitudes towards the client and optimistic expectancies correlate positively with outcome (Goldstein, 1962, pp. 35–52; Frank, 1973, pp. 152–165; Shapiro & Morris, 1978). Therapists' negative expectancies, on the other hand, may neutralise the effect even of medical treatments known to be active (Uhlenhuth *et al*, 1966). Therapist expectancies about the length of therapy influence the rate of improvement as perceived by clients (Goldstein, 1962, pp. 76–84; Frank, 1973, pp. 158–159). Therapist expectancies interact with the quality of the therapeutic relationship: positive expectancies make the therapist more interested and involved and, therefore, lead to a warmer relationship, while negative expectancies lead to more detachment (Wallach & Strupp, 1960).

Therapist expectancies parallel teacher expectancies on pupils (Rosenthal, 1974; Harris & Rosenthal, 1985) and may work through parallel mechanisms. Teachers give preferential treatment to high-expectancy pupils in four ways: (a) more emotional support; (b) clearer and more favourable feedback; (c) more attention and more teaching; and (d) more opportunities to perform and learn difficult material. Teachers' differential behaviour may lead pupils to reciprocate (low-expectancy pupils, for instance, may react to teacher avoidance or it may lead pupils to accept the teacher's judgements (low-expectancy students may become convinced that they are no good). Expectancies, furthermore, lead to selective perception and interpretation of ambiguous information in a self-confirming manner, thus perpetuating a self-fulfilling prophecy (Jussim, 1986). The same mechanisms may apply to non-specific and specific psychotherapy factors (expectancies and actual tactics) and between different non-specific factors (expectancy and relationship factors). If positive expectancies are consistently linked to better therapy and vice versa (better therapy leading to higher therapist involvement and therefore to higher expectancies), it is hard to imagine how therapist expectancies could be isolated in a placebo group: therapists' attitudes and expectancies cannot be made comparable between real and bogus treatments. Maybe the only way of having highly positive expectancy therapists for bogus procedures is to commit them to a specific research outcome, such as support for the expectancy arousal hypothesis. The fact that sham-treatment groups cannot match real-treatment groups on therapist expectancies undermines their utility: if the treatment group proved superior, one could always argue that the control group was not matched on therapist expectancies. Only null effects (that is, no superiority of treatment groups) would then be convincing.

Expectancies related to treatment credibility

Treatment creates expectancies for change. In control conditions, therefore, clients must believe that they have been treated, and not just any treatment will do – some are more credible than others and therefore create higher expectancies (Borkovec & Nau, 1972). Shapiro (1981) showed that credibility ratings of various treatments paralleled their differential effectiveness. These findings were taken to support the expectancy arousal hypothesis, although Shapiro himself suggested as an alternative that clients are simply good at evaluating treatments' potential for helping them.

Kirsch (1985) reviewed a dozen studies comparing desensitisation to highly credible placebos and concluded that, since most of them did not find significant differences favouring desensitisation, the expectancy arousal hypothesis was supported. We disagree, because a no-difference conclusion needs support from tests of high statistical power. Samples in the studies Kirsch reviews are very small ($n = 8–12$ per cell), which makes for low power levels (power levels are the converse of significance levels (Cohen, 1969)). We should not expect significant effects in those studies. With the samples in the studies reviewed by Kirsch (1985) and assuming expected effects of moderate size (e.g. 0.5 s.d.), power ranges from 15% to 21%, which means that even if a real difference had been present, the chances of missing it were from 79% to 85%. This is a weak basis for a 'non-difference' verdict.

Support for the expectancy arousal hypothesis is further weakened by the fact that, in most of the studies reviewed, trends favoured desensitisation. This shows that sham-control studies may be fruitless either way: if significant results are obtained, one can *always* dismiss them by claiming that the control group was not credible enough, whereas a conclusion of no-difference demands power levels far beyond those achieved by existing studies on this topic. The fact that trends have usually favoured desensitisation should discourage anyone from attempting a large-scale study in order to support the null hypothesis. Placebo studies, in short, are not adequate for testing the expectancy arousal hypothesis.

Culturally determined expectancies

Acceptable and unacceptable treatments, patient–physician and therapist–client relationships are all culturally defined (Hahn, 1985). Culturally determined expectancies also influence therapeutic outcome and interact with other specific and non-specific factors. Therapist attitudes in the use of hypnotherapy among Israeli-born and Russian-born therapists in Israel, for instance, are typically different: the Israelis get their best results with permissive, open-ended suggestions, the Russians with an authoritarian approach. Different responses to prescribed medication also illustrate interactions between cultural norms and specific factors: for many native Israelis, a successful visit to a physician must produce a prescription, while Ethiopian immigrants often turn their prescribed pills into good-luck necklaces. When specific treatments combine with cultural backgrounds, both are transformed and new properties emerge. The combination of non-specific and specific factors, contrary to the independence assumption, is like a chemical compound, not a mixture.

Expectancies about the self

Expectancies about the self reflect our beliefs about how we will behave in different situations. Self-efficacy theory (Bandura, 1977) and, more recently, response expectancy theory (Kirsch, 1985) deal with this issue. An efficacy expectation is the belief that one can do what is required to achieve a desired outcome. Self-efficacy theory asserts that such convictions determine the initiation and persistence of coping behaviour (Bandura, 1977). Psychological treatments are means for developing self-efficacy expectancies via (in order of decreasing importance) successful performance, vicarious experience, verbal persuasion, and the information produced by one's own emotions. The relative effectiveness of a treatment depends on how much it makes use of which means.

Response expectancy theory deals with expectations about such involuntary responses as emotion and pain (Kirsch, 1985). Since such responses can be pleasant or unpleasant, people's expectations about them affects their readiness to do things which may elicit those feelings. Acrophobics, for instance, avoid high places because they expect to panic when reaching them. Response expectancies also have a self-fulfilling quality, increasing the probability that the expected responses will indeed occur: expecting a panic attack helps bring one about. Psychotherapy works, this theory says, by modifying response expectancies.

The two theories each explain both non-specific and specific effects of therapy: effects of 'real' treatment, persuasion, and bogus manipulation are all described by the same concepts. Desensitisation, for instance, works via either self-efficacy or response expectancies, as does any effective placebo or non-specific factor. For this reason, says Kirsch (1978), placebo groups have no place in psychotherapy research. In sum, expectancy factors are not peripheral events in psychotherapy to be filtered out by appropriate methodology: they are *bona fide* and major treatment factors.

Reorganising factors

There are other non-specific factors in psychotherapy which are less widely recognised and discussed than relationship and expectancy. The reason may be, in part, because therapy schools tend to describe them in the specialised language of their own theories, and therefore fail to recognise their common functions. Specific techniques often differ across schools. As is always true in psychotherapy, however, 'specific' often refers to techniques and 'non-specific' to the functions they achieve. The less recognised, non-specific factors are also less investigated in psychotherapy research, perhaps because procedures are lacking for simulating them in placebo-control groups. Three of them are: (a) dismantling clients' dysfunctional patterns (Pentony, 1982); (b) providing new perspectives and concepts (Parloff, 1986); and (c) helping the client to address problems differently.

(a) Dismantling dysfunctional patterns

All psychotherapies dismantle or 'unfreeze' dysfunctional patterns (Bennis *et al*, 1973; Pentony, 1982, pp. 9–14), chiefly by mobilising disaffection in the client about the patterns themselves, and by loosening and modifying the pattern's contextual supports.

Mobilising disaffection

Although clients usually come to therapy wanting to change, their motivation is often too weak or narrow to work. All therapies try to boost this motivation by playing upon the client's capacity for self-dissatisfaction. This helps to undermine clients' attachments to their old patterns. One common therapeutic means is by pointing out discrepancies between the undesired behaviour and the image clients hold of themselves as persons with integrity, autonomy, and goodness. Another is by highlighting potential dangers of their behaviour for themselves and others. A third is by uncovering the irrationality

of their assumptions. A fourth is by reflecting contradictions in their statements and expressions of thought and feeling. There are yet others. By such means, guilt, anxiety, and displeasure are aroused and therapeutically channelled.

Loosening and modifying contextual supports

Symptom patterns are supported by the intrapersonal, social, and situational contexts in which they are embedded. Different theories stress different contextual links, such as family interactions, maladaptive cognitions, or reinforcement contingencies. Symptom patterns are thus parts in a jigsaw puzzle which is stabilised by its interlocking features. Psychotherapy tries to change the contextual props, to destabilise the puzzle by spoiling pieces' fit. Paradoxical interventions which figure in many kinds of therapy (sometimes by different names) dramatically illustrate this process by the absurd perspective they cast on the symptoms they address. Typically, the therapist prescribes intense repetitions of the very symptomatic behaviour about which the patient is complaining. Since the therapist's reaction and prescription are both foreign to the patient's expectations, the social and affective context is thereby shaken (Omer, 1986).

In different therapies, different choices are made about the contents and contexts they deal with, but all deliberately spoil the fit between symptom and context. Unfreezing is attempted equally in therapies which stress cognition, affect or behaviour. Specific techniques, if anything, are vehicles for conveying this non-specific factor.

(b) New perspectives and concepts

Therapies provide clients with a new view and a new rational account of their problems. This is often done in what is called a consciousness-raising process, in which the client becomes aware of previously unattended factors. Whether awareness *increases* is a moot point, but certainly the centre of attention shifts. Therapies also provide clients with new terminology, new ways of explaining events, and new conceptual schemes of the change process. Providing such organising schemata may be vital, regardless of their particulars, for allowing clients: to redefine and reframe problems; to provide an orderly account of their difficulties; and to conceptualise the change process.

Redefining and reframing

A new terminology not only relabels, but redefines and reframes the issues for the client. In learning to speak differently, clients are already changing their problems, possibly into more solvable ones. Redefinition also reframes the problem area by bringing in elements other than the ones originally attended to. A new cognitive map is thus created for facilitating alternative behaviour (Bennis *et al*, 1973).

Providing an orderly account

Conceptual schemata acquired in therapy order and simplify the chaotic diversity of events, by organising them into a rational, lawful-seeming framework. The accuracy of the organising hypotheses may be less important than the very fact that events are ordered and explained (Spence, 1982, pp. 175–214). A feeling of mastery and predictability thus replaces former helplessness.

Conceptualising change

The therapeutic scheme also conceptualises the change process itself through a change agent supposedly released in treatment which leads to a resolution of the problem. Strong & Claiborn (1982, p. 29) recommend that the change agent should be thought of as working inevitably and automatically, and as originating in the client and not in the therapist. Examples of such agents are organismic growth, basic rationality, released psychological energy, insight, and the Holy Spirit (Strong & Claiborn, 1982, p. 133). These constructs redirect the client's attention and foster optimism.

(c) Confronting problems differently

Most therapies encourage, directly and indirectly, new ways of confronting real-life problems. In some, such as behavioural treatments, changed action and experimentation is an integral part of treatment; in others, such as psychoanalysis, clients are reorientated psychologically to their own experience, and are expected to change their lives on their own. It has been hypothesised that even placebo treatments encourage mental or behavioural experimentation: the very belief that treatment has been administered leads clients to re-enter the problem situation and test the hypothesis that they have been cured (Bootzin & Lick, 1979).

Why have sham treatments not been invented to simulate these 'reorganising' non-specific factors? Perhaps because it is not possible. If the labelling process, or the conceptual schematising of problems, or of change, or the rethinking of context, are themselves therapeutic, then any sham version of them runs the risk of becoming a therapy in its own

right. How can one invent credible placebo labelling, for instance? By using nonsense syllables? Some procedures, indeed, which were designed as sham controls, have been criticised for being active specific treatments (Garfield, 1983).

Therapeutic impact

Therapeutic impact is the capacity of an intervention to overcome clients' tendencies to ignore it, neglect it, habituate to it, or forget it (Omer, 1987). Arousal, surprise, and investment of effort are three aspects of therapeutic interventions which give them impact.

Arousal helps to prevent lack of impact by inattention. Emotionally arousing therapies may be effective because they cannot be easily ignored rather than because of any specific value of the emotional events expressed in them. Even enhancing arousal artificially, such as by giving ether, has been shown to facilitate therapeutic change (Hoehn-Saric, 1978).

Surprising interventions may counter lowered impact produced by habituation effects (i.e. decreasing response to repetitive or expected stimuli) (Omer, 1987). Such effects might explain Silverman & Beech's (1984) finding that one-session interventions have a disproportionately strong impact and the fact that Smith *et al* (1980) found longer treatments no more effective than shorter ones. Therapies whose tactics surprise clients, as is common with new ones, may be more effective early in their careers precisely because clients have no habitual expectations about them.

Therapies which demand great effort may be more effective than others because clients will be less likely to forget them or trivialise them. Whether hypnotic treatments for stopping smoking use similar or different specific interventions, for instance, their effectiveness differs according to how much effort they require of clients (Omer, 1987). This may be true of other treatments too.

The levels of arousal, surprise, and effort induced by sham treatments have not been assessed. We expect that they are routinely lower than those induced by real treatments. In any case, the creation of convincing sham treatments which account for these variables, even if possible, might demand more skills and effort than real therapy does.

Conclusions

Research applications

Like Wilkins (1979, 1983), Parloff (1985), and Horvath (1987), we doubt that it is possible to design useful no-treatment or sham-treatment groups to control for non-specific effects. Fortunately, the relative efficacy of psychological treatments may be demonstrated well enough by comparisons between treatments, making placebo controls unnecessary (Parloff, 1985), or by comparisons with meta-analytic summaries (Critelli & Neumann, 1984). Such comparisons should also attend to the probable contribution of non-specific factors, but there is no good methodology for doing this at present. Diverse treatments may differ in quality of therapeutic relationship, expectancy, organising factors, and impact, and developing dependable procedures for assessing these non-specific factors when real treatment is given may be far more important than the chimerical pursuit of credible shams.

Placebo groups, as usually conceptualised, also have little to contribute to the study of therapeutic mechanisms, which demands the careful dismantling of potential therapeutic factors, and there is no place in it for a waste-basket category of non-specific noise.

Practical and theoretical implications

Psychotherapy is presently enjoying an ecumenical atmosphere in which dialogue between schools proliferates (London, 1984). Discussion of non-specific factors has contributed to this change by helping to overcome divisions (Omer & London, 1988) and to a common language across schools (Goldfried, 1980; Messer, 1986). Non-specific factors are also leading to new therapeutic theories linking treatment to cognitive and social psychological (Bandura, 1977; Strong & Claiborn, 1982) as well as to 'meta-techniques', which can be used with many specific approaches (Omer, 1986, 1987).

Professionalism and training

Training psychotherapists is a complex undertaking. One cannot learn to use non-specific factors except in the context of learning specific techniques. Far from implying that psychotherapy is merely "the purchase of friendship" (Schofield, 1964), our analysis suggests that therapists' technical expertise depends on how they manage the combination of non-specific with specific interventions. Apart from other techniques, all therapists must learn how best to steer the relationships, how to enhance positive and realistic expectancies, how to promote reorganisation of the client's perspective, and how to have maximum impact. Professional training should focus equally on specific techniques and non-specific skills.

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