HOW CAN BEHAVIOR THERAPY TREAT THE SAME DISORDER WITH DIFFERENT TECHNIQUES AND DIFFERENT DISORDERS WITH THE SAME TECHNIQUE?

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Summary — Traditional psychiatric diagnostic labels fail to differentiate patients on the basis of the function of the problematic behavior because such labels do not specify the nature of the individual's behavioral deficits or excesses. In contrast, behavior therapy strives to classify clinical phenomena based upon their functional characteristics guided by theoretical considerations. Yet, the anomaly exists that for a given disorder there is frequently a long list of suggested treatments that all have some degree of demonstrated efficacy. Similarly, there are a number of apparently different disorders that have been successfully treated with the same general technique. The implications of this paradox will be discussed in the context of treatments for depression. Our recent work suggests that different types of depression respond to different interventions depending on whether interventions match or do not match those types. Published by Elsevier Science Ltd.

Despite the notable success of behavior therapy in treating numerous psychological problems (Giles, 1993), many techniques lack well-developed procedural operationalization (Gavino, 1988) and others have only weak or no theoretical foundation (Eifert, Evans, & McKendrick, 1990; Franks, in press; Kazdin, 1978; Wolpe, 1989). This article will explore whether behavior therapy techniques could be more effective if we could identify decision making guidelines that pinpoint why a particular intervention is likely to be the most effective treatment for a given

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case. Rather than focusing on attempts to improve the implementation of behavioral techniques, we propose that individual treatment outcome could be improved most by clarifying the criteria and rules therapists use to decide (a) which variables to select or target for treatment, and (b) which general strategies to use and how to adapt and implement them in the individual case to change these targets (and why these targets and methods are preferable over others).

Currently, many behavior therapists seem to uphold the view that 'correct' nosological classification is the best method for deciding what problem to treat and how to do it (Barlow, 1993). Nosological systems (e.g., DSM-IV) offer concepts and categories to describe problematic behaviors from an atheoretical clinical perspective and classify phenomena according to their formal structural attributes. This approach has been criticized because diagnostic labels fail to differentiate clients on the basis of the function of the problematic behavior, that is, labels do not specify the nature of the individual's behavioral deficits or excesses (cf. Kanfer & Saslow, 1969; Wolpe, 1986). As a consequence, syndromal classification has little known benefit as measured by improved treatment outcome (cf. Hayes, 1995). We should therefore seek to classify clinical phenomena based upon their functional characteristics, and when doing so, we should be guided by theoretical considerations.

This mismatch of both approaches, nosological classification and functional analysis, has produced a peculiar and somewhat paradoxical situation in behavior therapy. For a given disorder, several different treatments are suggested that all have some degree of demonstrated efficacy. At the same time, there are a number of different disorders that have been successfully treated with the same technique. When we examine this situation more closely, we can identify two major anomalies: (a) treatment outcomes that, from a theoretical point of view, should have occurred but did not occur, and (b) treatment outcomes that, from a theoretical point of view, should not have occurred but that did occur.

The Non-occurrence of Theoretically Expected Treatment Outcomes

When authors write about successful treatments of DSM defined 'disorders' (e.g., depression, phobias, schizophrenia), they typically report one or several psychological techniques of demonstrated efficacy in treating that disorder. "Demonstrated efficacy" means that a treatment is effective for the majority of cases but not for every case. On the contrary, all psychological treatment techniques fail in some cases, no matter how effective overall they may be for any one type of disorder. So, there is not one treatment technique which is always effective when applied to the same disorder. This leaves the question: given the same treatment technique and same disorder, why do some patients improve whereas others fail to improve?

The Occurrence of Theoretically Unexpected Treatment Outcomes

From a theoretical point of view, there are two different types of situations involving treatment outcomes that are unexpected and should not occur: those in which different techniques produce similar therapeutic outcomes when applied to the same disorder; and those in which the same technique produces similar outcomes when applied to very different disorders.

Situations in which different techniques produce similar therapeutic outcomes when applied to the same disorder. Typically, numerous different techniques, all claiming some degree of demonstrated efficacy, have been applied to treat a given disorder (e.g., depression or anxiety)
as evidenced by lists of suggested effective treatments for that disorder. For instance, depression could be treated by cognitive therapy (Beck, Rush, Shaw, & Emery, 1979), rational emotive therapy (Ellis & Grieger, 1977), modification of causal attributions and expectancies (Peterson, 1982; Weiner, 1988), social skills training (Nezu, Nezu, & Perri, 1989), or by increasing pleasant activities and social reinforcement (Lewinsohn, 1974). Similarly, agoraphobia has been treated by such diverse techniques as in vivo exposure (Sinnot, Jones, Scott-Fordham, & Woodward, 1981), cognitive restructuring (Emmelkamp & Mersch, 1982), and thought stopping (O’Brien, 1979). For both of these clinical problems, reported outcomes show that dissimilar treatments may be similarly useful.

Situations where the same technique produces similar outcomes when applied to essentially different disorders. In contrast, we also find in the outcome research literature one therapeutic technique that has been successfully employed for treating a variety of disorders. For example, the technique of thought stopping has been applied for persons with obsessions, agoraphobia, hallucinations, and different types of fear (Wisocki, 1985; Wolpe, 1982). In a similar vein, in vivo exposure has been used for treating persons with phobias, obsessions, alcoholism, bulimia, obesity, trichotillomania, kleptomania, and many other problems (e.g., Marks, 1987, 1990; Rankin, Hodgson, & Stockwel, 1983; Rosen & Leitenberg, 1982; Sinnot et al., 1981).

Several questions arise from these observations: how can dissimilar techniques, with frequently dissimilar theoretical rationales, be similarly useful in treating the same disorder? Conversely, how is it possible that the same or similar techniques can be used to treat different disorders (with different etiological and maintaining factors and explanations)? In an attempt to account for this contradictory situation, we focused on two types of factors: theoretical factors (differences between morphological and functional perspectives of abnormal behavior) and methodological factors (flawed operationalization of therapeutic principles).

Morphological Versus Functional Perspective of Disorders

Most psychological and psychiatric nosological systems are, by nature, morphological in that they mainly describe and predict behavior in a static fashion based on co-occurrence of behaviors (statistical correlation). Some nosological systems include pathological personality traits and structures (Millon, 1984), but such structural concepts have not proven very useful for changing human behavior (McFall & McDonell, 1986; Pawlik, 1976). Behavior therapy techniques, on the contrary, are derived from theoretical principles of behavioral regulation that make pragmatic statements about functional relations and describe behavior dynamically.

Currently, then, we have concepts about morphological structures of a static nature with proven utility for prediction tasks, and concepts of functional dynamic relations with proven utility for obtaining behavior change (Pawlik, 1976). We could, therefore, conceptualize the same phenomenon from either a nosological or a functional perspective. Furthermore, the same nosological class can sometimes be classified functionally in several different ways. For example, the pattern of behaviors associated with sad mood, passivity, and poor eating, could be classified from a nosological viewpoint as a case of depression, and from a functional standpoint as a case of extinction and loss of reinforcers. On other occasions, however, this behavioral pattern might be more appropriately classified as a case of deficits in social behavior repertoires, or as flawed thinking based on wrong premises (cf. Eifert, Beach, & Wilson, in press).
Although in most instances there is no relation between nosological categories, functional explanations, and therapeutic techniques, there are a few cases where knowledge of the nosological classification is almost equivalent to knowledge of the functional variables and related therapeutic techniques. This is particularly true when a nosological class involves only a limited number of functional relations and, as a result, only a limited set of treatment techniques. An example is the nosological concept of phobia which is closely related at the etiological level to classical conditioning theory and at the treatment level to extinction and reciprocal inhibition (Eysenck, 1987; Wolpe, 1958, 1982). In such instances, evidence suggests that it may not be necessary to spend much time on individualizing treatments but sufficient to employ standardized treatment packages (cf. Schulte, Künzel, Pepping, & Schulte-Bahrenberg, 1992). More frequently, however, a nosological class of behavior does not imply any distinctive set of functional relations. As a consequence, several theoretical explanations and treatments are possible. As we will indicate, the concept of depression is a good example where dissimilar functional explanations are necessary to account for similar patterns of behavior. In such cases, we need to know what conditions and behaviors should be changed and what will happen to other functionally related behaviors in the patient's physical and social environment if a particular behavior decreases, increases, or is substituted by a new behavior.

The ‘Technification’ of Procedures: Relation Between Principles, Treatment Procedures, and Techniques

Thus, the anomalous results observed in the outcome literature arise, in part, from differences between morphological and functional perspectives of abnormal behavior. Other problems could result from a flawed operationalization of therapeutic procedures. For instance, the use of the same label for a technique does not guarantee the use of the same therapeutic procedure by different therapists or by the same therapist on different occasions. We can be relatively more certain that we know what therapists actually do and what type of variables they manipulate when specific techniques are used (e.g., systematic desensitization, flooding, or response-cost) compared with more general strategies such as rational-emotive behaviour therapy, cognitive restructuring, problem solving, or social skills training. In the first case, the referent (the content of the technique) is more clearly specified than in the second type of procedures. Issues concerning procedural specification lead to questions about what makes two therapeutic procedures different at the level of techniques, and about the requirements for a good (sufficiently specific) operationalization of a therapeutic principle or procedure.

What Makes Techniques Different or Similar?

From a procedural stance, a therapeutic technique could be viewed and operationalized as a type of production rule if it consists of at least one treatment target, one condition, and one action. Such operationalization will yield rules of the type “To affect target T, when condition C is present, action A must be performed”. In this rule, ‘T’ refers to the theoretical process to be changed; ‘C’ may refer to environmental conditions, internal states, and patterns of environment–behavior interactions. ‘A’ refers to the behavior or sequence of behaviors that is necessary to change target ‘T’ in circumstances ‘C’. To technify a therapeutic procedure, then, means to define and operationalize the sequence of therapist behaviors and under what conditions such a sequence should be effective to obtain a particular outcome. Such
technification makes it possible to test the validity of therapeutic procedures in the same way a psychological test (e.g., a personality inventory) is examined for reliability, validity, and utility. Conversely, when technification does not exist, we have to rely on the apparent, but not yet empirically demonstrated, validity of the procedure.

By production rules, we do not mean that a therapeutic technique is defined as an action or a sequence of actions, because the same sequence of actions does not necessarily produce the same outcome in two different situations. Rather, we must take into account all three factors: dysfunctional processes (treatment targets), conditions of applications, and actions to be performed. In doing so, we can assess whether two sequences of actions represent similar or different therapeutic techniques. When two therapeutic procedures directly affect the same target, we assume they are the same or equivalent techniques at the level of process (even when actions and conditions are different). When, in addition, the sequence of behavior and conditions is the same, the two procedures are identical. In contrast, when two theoretical variables are influenced, we say that they are different techniques, despite formal similarity at the procedural level. So, the same sequence of actions or conditions does not necessarily presume the same technique. What is necessary is that the same theoretical variable or dysfunctional process is influenced.

How are Techniques Related to Psychological Principles and General Procedures?

Many behavioral researchers have argued that behavior therapists employ interventions that are more or less directly related to, and derived from, psychological principles (Eifert, Forsyth, & Schauss, 1993; Eysenck, 1987). These interventions may either refer to general procedures and guidelines or to specific techniques. Currently, behavior therapists appear to employ basically two types of therapeutic procedures.

General procedures or guidelines directly derived from theoretical principles. An example of such a general procedure is exposure to fear-provoking stimuli which is based on the theory of fear extinction (cf. Eysenck, 1987). This general procedure has been operationalized and translated into several different well specified techniques (e.g., flooding in vitro, gradual in vivo exposure). Each of these techniques well defined in terms of sequence and steps of their application and in terms of which behavioral or environmental targets are to be changed (Marks, 1987).

Specific techniques derived from theoretical principles. An example for such a specific technique is systematic desensitization that is directly derived from the theoretical principle of reciprocal inhibition (Wolpe, 1958, 1982); another example is response cost (response contingent removal of positive reinforcers) which is directly derived from the principle of punishment. The main difference between a general procedure or guideline and a technique, as we define it, is that the technique is a well specified sequence of behaviors performed under certain type of conditions to influence a particular theoretical variable, whereas a guideline is often vague and ill specified. The advantage of a well specified technique over a general guideline is its better operationalization, concreteness, and clear applicability. Its main deficiency is the narrow class of conditions to which it can be applied. What we lose with specified techniques in terms of generalization across types of behaviors and conditions, we gain in certainty about how exactly to implement them and what outcomes we can expect.

Ideally, the operationalization of a therapeutic procedure is directly derived from a
theoretical principle. This requires that the theory allows for inferences about what types of actions are adequate, under what class of conditions they are therapeutically more promising, and what outcomes can be expected for these actions given some circumstances. Sometimes as research on a technique progresses and new data are gathered, the older theory no longer appears to fit present data. As a result, the theory from which that technique was derived becomes increasingly contentious and new theoretical perspectives arise. In the end, the technique could be well established and supported by empirical clinical research and practice, but either have no agreed upon supporting theory or a number of competing theoretical explanations, and its outcomes may be explained by new theoretical concepts. This has happened to a number of traditional behavioral interventions (e.g., in vivo exposure), the effects of which have been 'reformulated' from a cognitive perspective—but in a very unsatisfactory fashion (cf. Eifert, 1987, 1990; Wolpe, 1989).

Relation Between Functional Clinical Theories and Therapeutic Practice: the Example of Depression

Despite considerable frustration with syndromal-based assessments and treatments (cf. Seligman, 1995), an increasing number of behavioral publications have implied the existence of firm links between disorders (diagnoses) and treatment techniques: for instance, self-control for obesity (Craighead, 1985), in vivo exposure for phobias (Marks, 1987), and cognitive therapy for depression (Beck et al., 1979). This matching of treatments to disorders appears to have rendered behavioral assessment and functional analysis less important. In turn, accurate nosological classification or ‘diagnosis’ has become of paramount importance, because it presumably fosters selection of the most appropriate treatment.

In contrast, we believe that a matching of identified functional deficits with specific interventions could be more beneficial than an approach that matches treatments to disorders. If a clinical theory is to be useful for implementing effective treatments, then it must make statements about what class of conditions are likely to produce a class of outcomes, what class of behavioral procedures are to be implemented, and the sequence of their implementation. This level of operationalization allows us to classify therapeutic situations by the goals to be attained, the type of current conditions, and the type of actions that could be useful. Representing therapeutic techniques as production rules that express relations between goals, conditions, and actions may also point to the need to refine current therapeutic theories. For instance, when different types of goals, conditions, and actions are allowed within the same diagnostic category (e.g., depression), some conceptual change may be required.

We have chosen the example of depression because this nosological category is functionally very complex. Within a cognitive-behavioral perspective, depression can be approached from at least three theoretical and therapeutic frameworks. The first class of theories views depression as a consequence of loss of reinforcement and extinction, which occurs when the environment is unresponsive to the operants emitted by the individual. Such extinction may occur when there are no longer reinforcers in the environment, when the main reinforcing agent has disappeared, or because some other factor impedes the possibility of obtaining reinforcement from the environment (Antonuccio, Ward, & Tearnan, 1989; Lewinsohn, 1974; Lewinsohn, Muñoz, Youngren, & Zeiss, 1978). The second behavioral approach explains depressive behavior in terms of behavioral repertoire deficits particularly in regard to a lack of social skills necessary to extract reinforcement from the environment (Nezu et al., 1989). The
third approach represents cognitive theories that attempt to establish a link between depression and flawed reasoning and idiosyncratic thinking involving irrational beliefs; negative thoughts about oneself, the future, and the world; or a dysfunctional attributional style (e.g., Beck et al., 1979; Dobson, 1989; Ellis & Grieger, 1977; Försterling, 1980; Peterson, 1982).

Empirical work on the differential effectiveness of behavioral versus cognitive treatments of depression has produced mixed evidence and much controversy (cf. Heiby & Staats, 1990). As a result, some authors favor behavior therapy alone as the preferred approach (cf. Feinberg, 1992); others defend only cognitive strategies (e.g., Beck, 1976); and still others propose that some combination of both types of treatment is the preferable option (cf. Eifert et al., in press). We believe that behavioral and cognitive theories are not contradictory, and that both theoretical approaches and treatments may be useful when applied to different types of cases or classes of behavior (cf. Wolpe, 1981). The problem, therefore, is one of deciding when to apply one type of treatment and when to apply the other. In view of our previous considerations, a solution for this problem could come from establishing a close relation between different theoretical explanations for different types of depression and therapeutic techniques derived from, and matched to, those different theoretical perspectives.

Empirical Study

To examine some of our aforementioned theoretical notions we conducted a series of empirical studies at the University of Malaga (cf. Rodriguez-Naranjo, Godoy, Esteve, & Lopez, 1993; Rodriguez-Naranjo & Godoy, submitted). Specifically, we wanted to find out whether a treatment that is matched to the predominant dysfunctional process identified in a particular patient is superior to a treatment where no matching occurs. Due to space limitations, we can only summarize the final treatment study herein.

Rationale, Subjects, Measures and Procedure

Based on the previous discussion, depressive behaviors can be classified according to the variables and processes that underlie such behaviors resulting in three classes of problems that have similar behavioral manifestations but that are functionally quite different: extinction, behavioral repertoire deficits, and maladaptive cognitions. Because of practical constraints, we focused on individuals with one of two of the above general types of depression: persons with problems in their behavioral repertoire of social skills ('behavioral depression'), and persons with problems in their attributional style ('cognitive depression'). We operationalized cognitive depression as dysfunctional attributional style because theoretical models that propound cognitive factors have hypothesized that automatic thoughts and negative expectations are dependent on central beliefs and dysfunctional cognitive styles such as attributional style (Dobson & Shaw, 1986).

We selected a sample of 29 dysphoric students from a High School and a Professional Training program. Subjects either had a cognitively-based depression characterized by dysfunctional attributional style, or behavioral-based depression characterized by social skill deficits. Dysphoria was assessed with the Center for Epidemiological Studies-Depression Scale (CES-D; Radloff, 1980) and the Beck Depression Inventory (BDI; Beck, 1967). Attributional style was assessed with the Attributional Style Questionnaire (Seligman, Abramson, Semmell,
Social skills were assessed with the College Self Expression Scale (Galassi, Deleo, Galassi, & Bastien, 1974).

Participants were treated in one of two different ways: they received either eight sessions of cognitive reattribution therapy focusing on changing depressive attributional styles, or they received a behavioral training (eight sessions) focused on practicing and increasing social skills. In the matched conditions, eight persons with cognitive depression were treated with cognitive therapy, and seven dysphoric persons with behavioral depression were treated with behavioral treatment. In the unmatched conditions, seven persons with cognitive depression were treated with behavioral therapy, and seven persons with behavioral depression were treated with cognitive therapy. We predicted that if a subject suffers from a dysfunctional attributional style (cognitive depression), a therapy focusing on reattribution should improve their depression but not a training in social skills. Conversely, if a subject suffers from a social skills deficit (behavioral depression), then training in social skills should improve depression more than attempting to change attributional style.

Treatment Results and Discussion

Treatment results revealed that, as a rule, cognitive treatment was more effective for cognitive depression, and behavioral treatment for behavioral depression. Accordingly, when functional type of depression and treatment type were matched both means and standard deviations (variance) for measures of dysphoria decreased. When the treatment was unmatched, group means decreased but group variances increased indicating that treatment effects were considerably more varied. We also observed that both types of dysphoric subjects exhibited clinically elevated levels of anxiety as measured by the S-R Inventory of Anxiousness (Endler & Okada, 1975). As was the case for dysphoria, anxiety in persons with cognitive depression responded better to cognitive compared with behavioral therapy and vice versa. We conclude, therefore, that matching treatments to specific dysfunctional processes helped more subjects to become less depressed, it helped them to a larger extent, and treatment effects also generalized more to related areas of dysfunction (e.g., anxiety).

Our results support findings from earlier studies investigating treatment matching in depressive patients (cf. Heiby, 1986; McKnight, Nelson, Hayes, & Jarrett, 1984). On a more general level, our findings lend support to the notion that functional theories are useful to classify patients in a way that guides the choice of the most effective treatment based on theoretical criteria. This approach enables us to predict when a treatment is likely to be more effective compared with others and to consider what other specific and nonspecific collateral effects might also be expected. It follows that when studies compare the effectiveness of two or more treatments, it is essential to consider what variables these treatments target and whether these or other variables are affected in a particular patient. Only in this way is it possible to predict what type of treatment is likely to be most effective in the individual case.

Conclusions and Outlook

From a functional point of view, there are two types of nosological categories. The first type allows a limited number of functional interpretations and, hence, only a limited number of therapeutic techniques. Once the nosological category (diagnosis) and related functional interpretation is known, one of a limited number of treatments can be used to target the
dysfunctional process ('cause' of the problem)—examples for this type of category are phobic anxieties.

The second class of nosological categories are those that allow a number of different functional interpretations and treatments. Once the diagnosis is made, a functional analysis is necessary to identify the relevant factors controlling the problematic behavior which are to become treatment targets. As an example, a general diagnosis of depression is of only limited clinical use because it does not tell us exactly what treatment we should choose. From a therapist perspective it would be more beneficial to diagnose such individuals as having insufficient repertoires of social skills, or as being on an extinction schedule, or as suffering from environmental exhaustion of reinforcers or the like, and then to match treatment to the most relevant dysfunctional variable(s) as identified for a particular patient. On the other hand, group treatments aimed at either modifying dysfunctional attributional styles or increasing social skills to obtain more social reinforcement can both be successful provided they are applied to appropriate groups of subjects. However, without a psychological theory that guides the therapist in a functional analysis of the individual case, a therapist will not be able to predict for a particular patient whether one or the other strategy is likely to be more successful.

We hope that future theoretical refinement and empirical research will help establish a new classification system of dysfunctional behavior that is more in accordance with behavioral concepts and principles by focusing on the functional rather than structural aspects of behavior. Such a classification system would be more useful for the practicing clinician than the existing descriptive structural systems that predominate the field today.

References


