Therapeutic Change Viewed through Behavior Analytic Lenses

El Cambio Terapéutico Visto a Través de las Lentes del Comportamiento Analítico

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Abstract. As we struggle with evaluating our many forms of psychotherapy, we are met with a panoply of differing means of introducing change. To compare these various forms of intervention, we need a common theory to make that comparison productive. This paper suggests that behavior analysis can provide us with such a theory.
Keywords: behavior analytic, common theory, intervention, psychotherapy, therapeutic change.

Resumen. Mientras luchamos con evaluar nuestras muchas formas de psicoterapia, nos encontramos con toda una gama de diferentes medios de introducir cambios. Para comparar estas diferentes formas de intervención, necesitamos una teoría común de tal forma que la comparación sea más productiva. Este artículo sugiere que el análisis del comportamiento nos puede ofrecer esta teoría común.
Palabras calve: cambio terapéutico, comportamiento analítico, intervención, psicoterapia, teoría común.

It is hard to find a clinical psychology journal that does not contain at least one article that compares the effectiveness of various therapeutic techniques. Which is better? CBT (Cognitive Behavior Therapy)? Psychodynamic therapy? Psychoanalysis? Behavioral Activation? REBT (Rational Emotive Behavior therapy)? FAP (Functional Analytic therapy)? And so on. Furthermore, there is, in fact, a great need for effective therapy or at least modification of some behavior to help people with psychological problems. Nevertheless, important as it is to ask which therapy is the best, or the most appropriate one, discovering "which is the best therapy?" is not a scientific question. A scientific question would ask about each of the different kinds of therapy what aspect of each is doing what? What particular procedure of each therapy is doing what? To engage in a scientific investigation, we must apply a particular model to the therapeutic interaction. We have to remember that there are many other social interactions that take place in which one person succeeds in changing the behavior (at least the verbal behavior but often the nonverbal behavior) of another person without that interaction having to be called therapy of any kind at all. There is, for example, the sales interaction, the parent child interaction, the teacher student interaction, the friend to friend interaction or simply the interaction among strangers in terms of who is to enter an elevator first, how one can get directions to a particular address, etc. You don't have to be a therapist to affect the behavior of another person; indeed, if we did not have that capacity, we surely could not interact with any other person or survive in society. Furthermore, the therapist is also affected by the client. In essence then, what we need to do, to find the best way of helping people with psychological problems, is to model the behavioral interactions between people in such a way as to uncover the variables underlying their interaction.

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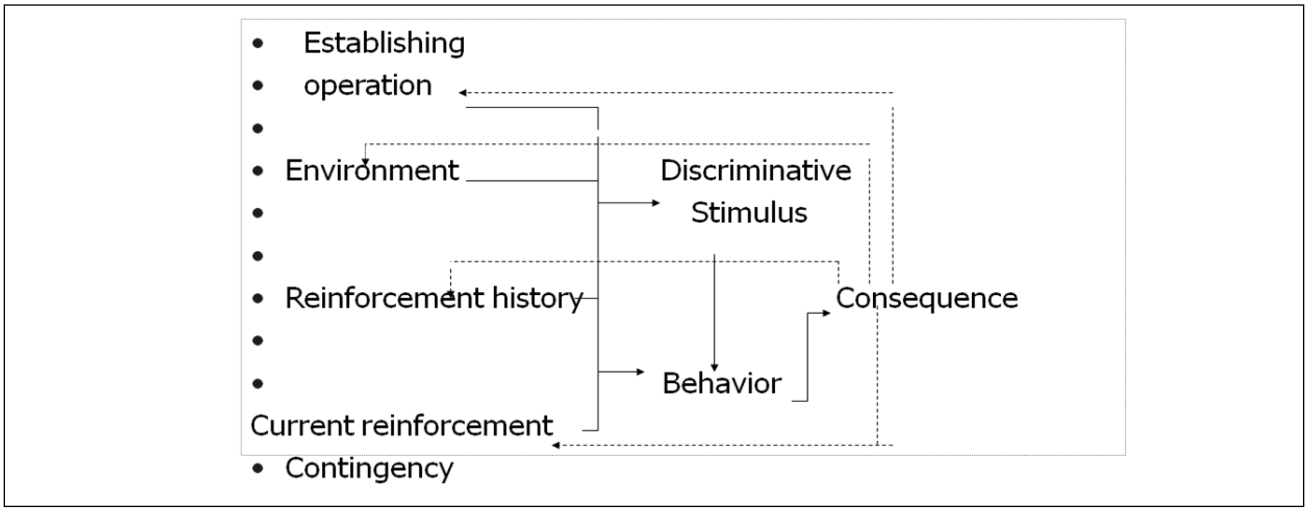
Recently, Kazdin and Blase (2011) raised another question with respect to psychotherapy, namely how to help large groups of people when the number of "helpers" needs to be increased and diversified with respect to their backgrounds. These authors maintained that the current group of psychologists, psychiatrists and social workers is not large enough to deal with the many potential clients based on current modes of training and intervention. This need constitutes still another reason for identifying a model that would make clear the basic variables that are at work in therapy.

As I started to write this paper, I came across still another series of papers on the evaluation of psychotherapy in a scientific manner. David and Montgomery's (2011) approach to evaluating the scientific status of various psychotherapies was to require that the ones deemed to be an evidence-based psychotherapy should not be limited to empirical evidence for being effective but should provide a theory positing its mechanisms of action. A number of authors added some commentary to this paper: The first one, J. M. Lohr (2011) approving of David and Montgomery's paper, suggested the additional requirement that the psychotherapy demonstrate that specific features of the treatment cause specific changes in the disorder specified by the theory. A second paper (Lillienfeld, 2011), while also approving of David and Montgomery's (2011) approach, was less sanguine about such matters as knowing just how a given therapy works and spoke of the possibility that a given method of therapy might work in the absence of any real relationship to a theory or having a relationship to a theory that is basically flawed. He added to all this that we consider the notion of theoretical plausibility in the process of validating any form of psychotherapy. A third commentary on David and Montgomery (2011) was written by Bjornsson (2011). He was most concerned by nonspecific factors in psychotherapy, both those that were involved in the disorder and those interacting with specific factors and he wanted those considered when evaluating any form of psychotherapy.

My approach here will be similar to much of what the papers above say but it will differ from these papers only in the sense that I will try to use one particular scientific model to evaluate all forms of therapy rather than relying on the model suggested by the originator of each therapy technique. It will also be able to consider the important nonspecific factors in psychotherapy, as suggested by Bjornsson (2011) because it will characterize all interactions between therapist and patient. By employing the behavior analytic model, I am using a model which has a very large amount of data backing it up and a theoretical model extensively applied and found useful. I first propose the behavior analysis model to guide us in our attempt to gain an understanding of the many and varied verbal interactions (see Fig. 1). Note to begin with, that behavior is generally preceded by a stimulus which we call the discriminative stimulus and is generally followed by a consequence which

Fig. 1 The behavioral mechanism demonstrating the law of effect



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we call a reinforcer. This sequence of events constitutes the basic interaction that we refer to as the law of effect. It is also important to note that for any consequence to be effective there must be an establishing operation. In the case of nonhuman animals, that usually constitutes a food deprivation operation but there are other establishing operations that work on both kinds of animals, such as, for example, the ingestion of salt to make drinking reinforcing; there is also apparently anxiety or depression to make talking to someone about one's troubles (maybe to a therapist) reinforced by the verbal behavior of another person. The discriminative stimulus is of course very important in the case of therapy; here, we often hear of the significance of the relationship of client and therapist, meaning at the very least, that some therapists constitute, and otherwise provide, appropriate discriminative stimuli for unburdening or at least revealing oneself. The reinforcement history must also be taken into account; the client with the experience of having seen a therapist before will more easily emit the verbal behavior that the new therapist will expect and be able to deal with. The client whose verbal behavior was reinforced in his home or other early environment might well be more likely to take to psychotherapy than the one whose verbal behavior was not occasioned or reinforced by members of his early or simply earlier environment. Note also that the environment (physical as well as social) has an effect according to this model and that as the client emits behavior, the consequences feed back to the establishing operation, environment, reinforcement history and current reinforcement contingency. Any verbal interaction is comprised of those basic variables, and given that any psychotherapy contains verbal interactions, particularly with adults, it is of interest to see what those discriminative stimuli and reinforcers are that impinge on which particular verbal responses of the clients in the various therapies.

We also have to consider the fact that individual responses belong to response classes and as we reinforce a particular response we are in fact only reinforcing a particular instance of one or more response classes. Those classes will change from client to client and time to time and one has to be very careful to keep track of what those classes are.

There is a rather large basic literature dealing with verbal behavior (Salzinger, 1967, 1969, 1978; Skinner, 1957). Some years ago, Verplanck (1955) demonstrated verbal conditioning of opinion statements. As the subject expressed opinions, the experimenter reinforced them by agreeing with them and thus produced an increasing number of such statements. Three years later Salzinger and Pisoni (1958, 1960, 1961) and Salzinger, Portnoy, & Feldman (1964) demonstrated verbal conditioning of self-referred affect statements in both schizophrenic patients and normal subjects hospitalized for physical ailments. It is also interesting to note that the conditioning of response classes took place in such a way that a more general class first increased and then as the conditioning continued, successively narrower response classes actually changed. In this way, the first response class to change was an increase in general speech rate, then in statements beginning with the pronoun I or we, followed eventually by a change, that is, an increase in self-referred affect statements like "I love," I hate," "I am depressed," "I am happy," "we were sad," and so on. The point is that verbal behavior changed as a function of the experimenter's reinforcing behavior of self-referred affect statements but the precise changes at any given time constituted a gradual narrowing of the response class as the conditioning process took place. Indeed, the precise change cannot always be predicted because it depends on the response class membership of each response being reinforced. Thus, when we (Salzinger, Portnoy, Zlotogura, & Keisner, 1963) made an attempt to replicate Greenspoon's (1955) classical experiment on the conditioning of plural nouns, we found that the response class which changed in response to reinforcement was actually more specific than the one that we had intended to change. The specific changes that took place were words ending with the sound "z" as in tables and chairs rather than the more abstract response class of plural nouns as in men, desks, sheep. The general point of all this is of course that interlocutors do affect each other as they speak to one another. Nevertheless, what all this implies is that the therapist who is trying to affect the behavior or at least the verbal behavior of his client cannot always predict precisely what change

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he or she will be inducing. It might not be evident even as the therapist responds to what the patient or client says because individual responses can be members of several response classes only some of which are of interest. Furthermore, it is not always obvious to the therapist whether he or she is reinforcing or punishing a particular response emitted by the patient or client, or at least not until some later time. Thus, a statement by the client of a superficially self derogatory nature followed by therapist agreement might well not constitute a positive reinforcer. The therapist might reinforce the statement as an instance of "insight" about how the patient regards himself or herself rather than as an instance of a correct self description.

Assuming that the therapist is "programmed" to try to influence the client's verbal behavior in particular ways, it becomes important for us to lay bare just what kinds of changes the therapist can induce and then how those verbal behavior changes can translate themselves into changes in other verbal and nonverbal behaviors, presumably the ones that the client came to see the therapist for in the first place. It is of interest, in this regard, to review Catania's (2006) table listing the many different types of verbal and nonverbal contingencies that one must consider.

Clearly, there are many different relations that may inhere in our verbal and nonverbal behavior. It would be of interest to trace these contingencies with respect to what the therapist produces and hopes for the client to become subject to. Thus, the antecedent or what we have called the discriminative stimulus in Fig. 1 can be verbal or nonverbal in Table 1. For example, the alarm clock might be a nonverbal discriminative stimulus for your getting up in the morning and the consequences can be nonsocial in that you would start getting out of bed, getting washed, etc. with nonsocial consequences of being ready to make breakfast, etc. At the same time that the nonverbal stimulus of the alarm clock going off might result in getting up one's partner might provide verbal consequences such as saying "Good morning" or starting an argument about having been awakened needlessly, etc. 1c (self-management) in Table 1 might be exemplified by finding a leak coming from your upstairs neighbor's apartment which you would respond to by calling him and having him turn off the water in the overflowing bathtub. The problem behavior might well be for the client to summon up the courage to call the neighbor to deal with the problem. Even though the consequence would be nonsocial, it would have to include responding to social consequences of making a phone call to achieve the nonsocial end of the cessation of the leak. 2 e (tracking) could be exemplified by having the wife learn for homework (assuming we are talking about CBT) how to respond to her husband who says outrageous things in company by learning to walk away from that conversation. And so on for the other categories of Table 1. The point of all this is to have available a systematic way of characterizing the particular kinds of antecedents, responses and consequences involved in the problem behavior of the client. This kind of analysis would lay bare the particular variable or variables that must be manipulated to solve the client's problem. And for any particular therapeutic technique it would allow one to characterize what is actually going on during the therapeutic session with what particular goal.

I should point out one other characteristic about behavior analysis and that is the fact that it has always, at least from the point of view of radical behavior analysis, considered private events, including thought, as behavior that should and can be considered within the behavioral framework (Salzinger, 1992). Cognitive activity such as decisions is, like

Table 1. A classification of verbal and nonverbal contingencies

	Antecedents	*Behavior*	*Consequences*
1. Contingency-governed Behavior			
a. Nonsocial Behavior	Nonverbal	Nonverbal	Nonsocial
b. Social Behavior	Nonverbal	Nonverbal	Social
c. Verbal Mediation, Self-management	Nonverbal	Verbal	Nonsocial
d. Naming, Labeling, Description	Nonverbal	Verbal	Social
2. Verbally Governed Behavior			
e. Tracking	Verbal	Nonverbal	Nonsocial
f. Pliance	Verbal	Nonverbal	Social
g. Logic, Calculation, Invention	Verbal	Verbal	Nonsocial
h. Speaker-Listener Behavior	Verbal	Verbal	Social

From Catania (2006)

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other behaviors, controlled by discriminative and reinforcing stimuli. The difference between thought or private events and other behaviors is merely that the former can be observed by only one individual while public behaviors can be observed by many. The modification of private behaviors can be studied using the same concepts as one employs for public behaviors. There is also no reason to give priority to private behavior in determining the causes of other behavior. Sometimes verbal behavior will precede or occasion other verbal or nonverbal behavior; sometimes the relationship will be reversed.

Before applying the behavior analytic model of the behavior taking place during the therapeutic hour, we should examine another behavioral relationship, that is, what we call correspondence between verbal and nonverbal behavior. A recent review by Lloyd (2002) suggested that not enough research was being done at this time. I can only add to this that we need more research of this kind with normal adults since most research was either with very young children or retarded or otherwise disabled individuals. Nevertheless, the paradigm for studying the relationship between what we say and what we do is obviously an important one for gaining an understanding of the psychotherapeutic process. The formulation I showed in Table 1 above will be very useful in trying to analyze how a client presents his or her case to the therapist and how accurately the problems are in fact explained.

Now, we are going to take up a number of types of psychotherapy and see what light we can shed on them by means of behavioral analysis of the process. Let us look first at Functional Analytic Psychotherapy (FAP) (Kohlenberg and Tsai, 1991) given the fact that this kind of therapy is explicit with respect to the kind of response classes that it wishes to affect. The authors refer to them as clinically relevant behaviors (CRB). Thus, the client may be demonstrating the behaviors in the therapeutic session which are the ones proving to be problematic in his or her life outside of the therapeutic session. Incidentally, such demonstrating of problem behavior is also made much of in psychoanalysis. A second clinically relevant behavior may display improvement in the client's behavior that used to be problematic before, either in the previous sessions or outside in the client's life. The third response class of interest and the most promising perhaps is the client's display of behavior indicating ability to use behavior analysis to interpret his or her own problematic behavior. Applying the behavioral mechanism in Figure 1 to FAP is not difficult here and not surprising given the fact that the authors' therapy is based on behavior analysis. Thus, CRB 1 – displaying one of the problematic behaviors that brought the client to the therapist would be a useful one if detected by the therapist. The therapist could then provide the discriminative stimulus to the client so that he or she could learn to detect that problematic behavior by himself or herself and learn to alter that behavior outside of the therapeutic session. Obviously, the therapist would then engage the patient in a discussion that might well result in a behavioral analysis of the problem as well. The second CRB, that of showing improvement in behavior, would be exactly what the therapist could then reinforce appropriately and most usefully. The third CRB emitted by the client would also require reinforcement so that he or she could use behavior analysis outside of the session and away from the therapist.

The trick in all of this, of course, is that the therapist would have to learn to recognize and respond quickly enough with the appropriate and timely reinforcement. Pointing out problematic behavior although possibly obvious to the therapist might not be so for the client and pointing it out to the client might well even be aversive to him or her. Gradual introduction of the naming of a particular behavior as an example of a problem behavior might well be required to avoid having the client respond to the very process of naming as being aversive. Gradual introduction of a behavioral analysis might also be used to train the client in doing behavior analysis of his or her problem. Supplying a model of behavior that could be used instead of the problem behavior would be useful to the client when he or she encounters the problem outside of the therapeutic session.

Let us next discuss cognitive therapy in behavior analytic terms. In recent years, there has been much discussion of CBT or cognitive behavior therapy but I will maintain that all therapies are basically behavioral. As W. N. Schoenfeld used to say when asked

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whether he was a behaviorist, "Of course, and you, you're a "nonbehaviorist"? You study nonbehavior?" In a similar vein, Albert Ellis first spoke of rational emotive therapy (RET) but eventually admitted behavior to the fold, renaming his therapy REBT or rational emotive behavior therapy. Cognitive Behavior therapists who used to call themselves cognitive therapists also have incorporated the word, "behavior" into their name. So, what then is left to cognitive therapy? The answer is that these therapists believe strongly that behavior does not occur in the absence of thought and emotion, that basically no behavior can be understood without taking the thoughts "underlying" the behavior into account. And they spend their time, although they do now give "homework" which turns out to be mainly behavioral, in the therapy session debating what the client thinks or thought when he emitted the behavior of interest. In other words, the most important aspect of the therapeutic interaction is to determine an understanding of the problem, by evoking the client's thoughts about events, through his or her verbal behavior. From a behavior analytic point of view then, the therapist's job is to elicit verbal behavior which is then either positively or negatively reinforced to explain the client's problematic behavior. The client may report that he walked out of a party when he found a group of people laughing in his presence. The therapist might then ask the client how he knew they were laughing about him and not for a different reason. That interpretation might elicit more verbal behavior from the client, consisting of a reevaluation that might make him say maybe it was a joke they had just talked about. That might well make the client feel better, constituting a positive reinforcer for the client's unburdening himself to the therapist. It might also, this kind of therapist would say, teach the client to reconsider other of his unhappy thoughts in a similar manner.

Beck and Freeman (1990), in a discussion of general principles of cognitive therapy talk of ferreting out the meaning that clients attribute to events that happen to them. The authors maintain that those meanings are related to underlying beliefs. This suggests that the client's subvocal behavior relates to other verbal behavior. The question remains, however, whether this verbal behavior precedes or follows the event in question, whether it is the event or the verbal responses to the event that produce the disagreeable feelings.

It is of interest that therapists often over interpret why a client does not engage in behavior that had been dealt with for a number of sessions. Giving an example of a 39-year old lawyer who was getting divorced and saying that he would never again be able to live with a woman, the cognitive therapist thought the patient was not calling a woman for a date because of his avoidant diagnosis. The suspected resistance of the client in not calling a woman that someone had provided him a name for, however, was actually a function of not knowing how to start such a conversation. The therapist discovered this when he had the client role play and found that the client actually did not know how to make such a call or knowing what to say. Providing the client with this information through the role play solved the problem so that the client was able to set up a date almost immediately. A behavioral analysis would of course provide the explanation of the problem without any difficulty. Absence of a reinforcement history in certain skills would easily explain absence of behavior without appealing to some abstract diagnosis as to a general tendency to avoid "scary" situations.

As already indicated, an interesting approach to psychotherapy is roleplaying (Corsini, 1966). From the point of view of behavior analysis, it is a matter of presenting discriminative stimuli and reinforcing stimuli that are not usually provided to the therapist. Thus, the therapist sees more accurately exactly what the client has been describing. But even more interesting is the reenactment by the client of a situation he would merely describe and often in a less accurate manner. Both the therapist and the client learn from the roleplaying because roleplaying allows both to essentially do a behavioral analysis of what went on. Furthermore, when the therapist asks the client to reverse roles, that is, to play the part of the other interlocutor and to have the therapist play his role, the client experiences the discriminative and reinforcing stimuli from the other person's point of view. That situation then provides the client with the essential controlling stimuli that the other interlocutor faces and should

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again help the client in constructing a behavioral analysis of the situation.

The most direct way of using roleplaying is to have the client enact the behavior he or she wants to enact but finds it very difficult to do. Behaving in the session without having to face the dreaded consequences allows the client to habituate to stimuli similar to those that he or she will face when behaving in the dreaded situation. Furthermore, he may discover during the role playing that there will be no dreaded consequences. Corsini (1966) provides a number of examples where the client role-plays in the session and subsequently succeeds in doing it all appropriately in the actual situation.

Let us next look at psychodynamic psychotherapy and see how the behavior analytic model could be used to shed light on its process. Therapist interpretations of what the clients say are considered to be a major kind of intervention by this form of therapy. Silberschatz, Fretter, and Curtis (1986) studied how interpretations influence the progress of therapy. Beginning with the assumption that clients enter therapy with a plan or an assumption of what is wrong with them and therefore what interpretation would be in agreement with that assumption, these authors measured the relationship between compatible interpretations and the client's progress to find that the compatible interpretations resulted in more progress than the incompatible ones. Interestingly enough, one can also interpret compatibility of interpretation as being positively reinforcing, given that agreement was shown to act as a positive reinforcer in other studies (e.g., Verplanck, 1955; Salzinger and Pisoni, 1958). These investigators also probed whether the kind of interpretation beyond the compatibility, such as transference vs. nontransference made a difference and found that it did not. The very fact that at least the orthodox psychoanalysts make it a practice to speak little means that they are presenting a stimulus for talk. One can easily see the power of silence as a discriminative stimulus, or possibly as a negative reinforcer for talk, when finding oneself alone with another person in an elevator. All of a sudden the weather conditions seem to be the most urgent topic to be discussed - - anything to escape the negative reinforcer of silence.

Having shown that behavior analysis can be readily applied to characterizing a number of forms of therapy, it now remains for us to apply it to actual therapeutic sessions by relating a content analysis of the transactions taking place to the changes (hopefully improvements) transpiring in the lives of the patients.

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